# Thirty Road (Regional Road 14) at Young Street in the Township of West Lincoln Schedule 'C' Municipal Class Environmental Assessment

Environmental Study Report

Final

**November 2024**

Prepared for:

RVA

Niagara Region

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Niagara Region

In Association With:



**RVA 226468**

**November 2024**

# THIRTY ROAD (REGIONAL ROAD 14) AT YOUNG STREET CLASS ENVIRONMENTAL ASSESSMENT

## ENVIRONMENTAL STUDY REPORT

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# EXECUTIVE SUMMARY

In response to public concerns regarding safety and the results of the In-Service Road Safety Review (ISRSR) for the intersections of Thirty Road (Regional Road 14) at Young Street and Thirty Road at Clayson Road in the Township of West Lincoln, the Regional Municipality of Niagara (herein referred to as 'Niagara Region') retained R.V. Anderson Associates Limited (RVA) to complete a Schedule 'C' Municipal Class Environmental Assessment (MCEA), a Detailed Transportation Assessment, and Preliminary Design for the intersection. The main objective of this study is to address road safety requirements, assess the existing road capacity and future travel demand.

Various technical studies were completed to assess the existing conditions and potential impacts of the alternatives being considered. Studies included: Detailed Transportation Assessment, Natural Environment Assessment, Stage 1 Archaeological Assessment, Cultural Heritage Assessment, Noise Impact Assessment, and a Geotechnical Investigation. The findings of these studies were incorporated into the evaluation of alternative solutions and design concepts and are summarized in this Environmental Study Report (ESR).

The Schedule 'C' Municipal Class Environmental Assessment (MCEA) is an approved process under the *Environmental Assessment Act*. This report was developed to document Phases 1 – 4 of the Schedule 'C' Municipal Class Environmental Assessment process for this project, and to select the preferred design concept and develop the preliminary designs for improvements at the Thirty Road and Young Street, and at Thirty Road and Clayson Road intersections. The Study Area is outlined in Figure ES 1 below.

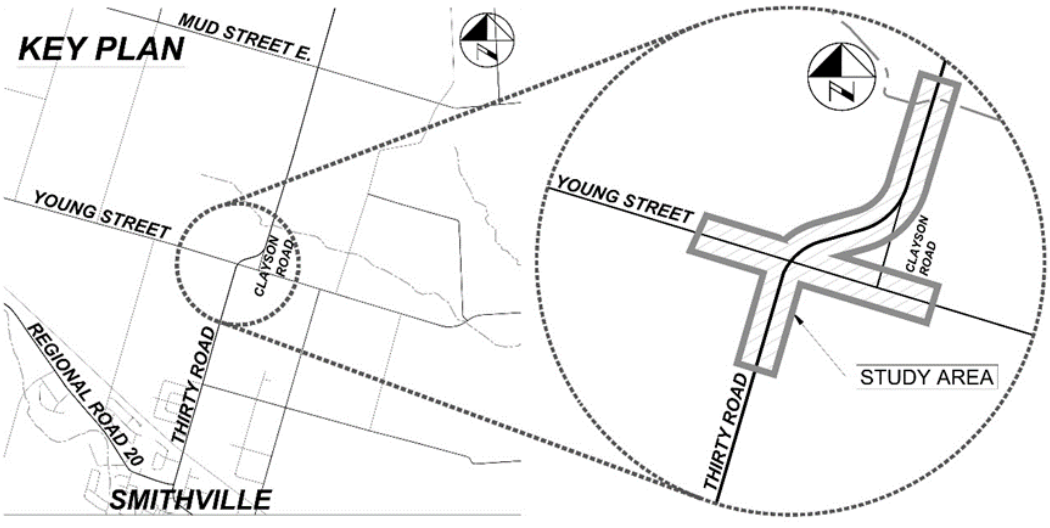


Figure ES 1 Study Area

## Class EA Phase 1 – Problem or Opportunity Statement

The need and justification for this project was developed from the results of the ISRSR and intersection safety concerns from the public. In accordance with Phase 1 requirements of the MCEA process for a Schedule 'C' project, a "Problem and Opportunity Statement" was prepared following the assessment of existing conditions within the Study Area to identify the various problems and opportunities to be addressed throughout the study.

The Problem and Opportunity Statement is comprised of the following key elements:

- Reverse curve alignment of Thirty Road north of Young Street causing insufficient stopping sightline distance at Young Street and maneuverability issues for larger farm vehicles and commercial trucks;
- Right-of-way conflict at Thirty Road and Clayson Road;
- Westbound traffic utilizing Clayson Road as a cut-through to avoid the Thirty Road at Young Street intersection; and
- Lack of pedestrian and cyclist facilities.

## Class EA Phase 2 – Alternative Solutions

Five (5) alternative solutions to address traffic and safety concerns at Thirty Road at Young Street and Thirty Road at Clayson Road intersections consisted of the following options:

- Alternative 1: Do Nothing
- Alternative 2: Thirty Road and Young Street Intersection Improvements and close Clayson Road at Northern Terminus
- Alternative 3: Improvements for Clayson Road and Young Street Intersection and close Thirty Road Segment north of Young Street
- Alternative 4: Realign Thirty Road north of Young Street
- Alternative 5: Extend Clayson Road south of Young Street

Based on the comparative evaluation that was undertaken using criteria representing the broad definition of the environment as described in the EA Act and feedback from the public and agencies, the preferred solution was Alternative 2.

## Class EA Phase 3 – Alternative Design Concepts

In Phase 3 of the EA, six (6) alternative design concepts to implement the preferred solution (Alternative 2) were developed and evaluated. Alternative design concepts consisted of the following options:

- Alternative 1: Do Nothing
- Alternative 2: 4-Way Stop Controlled Intersection with Realigned Thirty Road

- Alternative 3: Signalized Intersection with Realigned Thirty Road
- Alternative 4: Roundabout Intersection with Thirty Road Realigned North of Windfarm Poles
- Alternative 5: Roundabout Intersection with Thirty Road Realigned South of Windfarm Poles
- Alternative 6: Roundabout Intersection with a Right-turn Channel

Based on the comparative evaluation that was undertaken using criteria representing the broad definition of the environment as described in the EA Act and feedback from the public and agencies, the preferred design concept was Alternative 5, as shown in Figure ES 2 below.

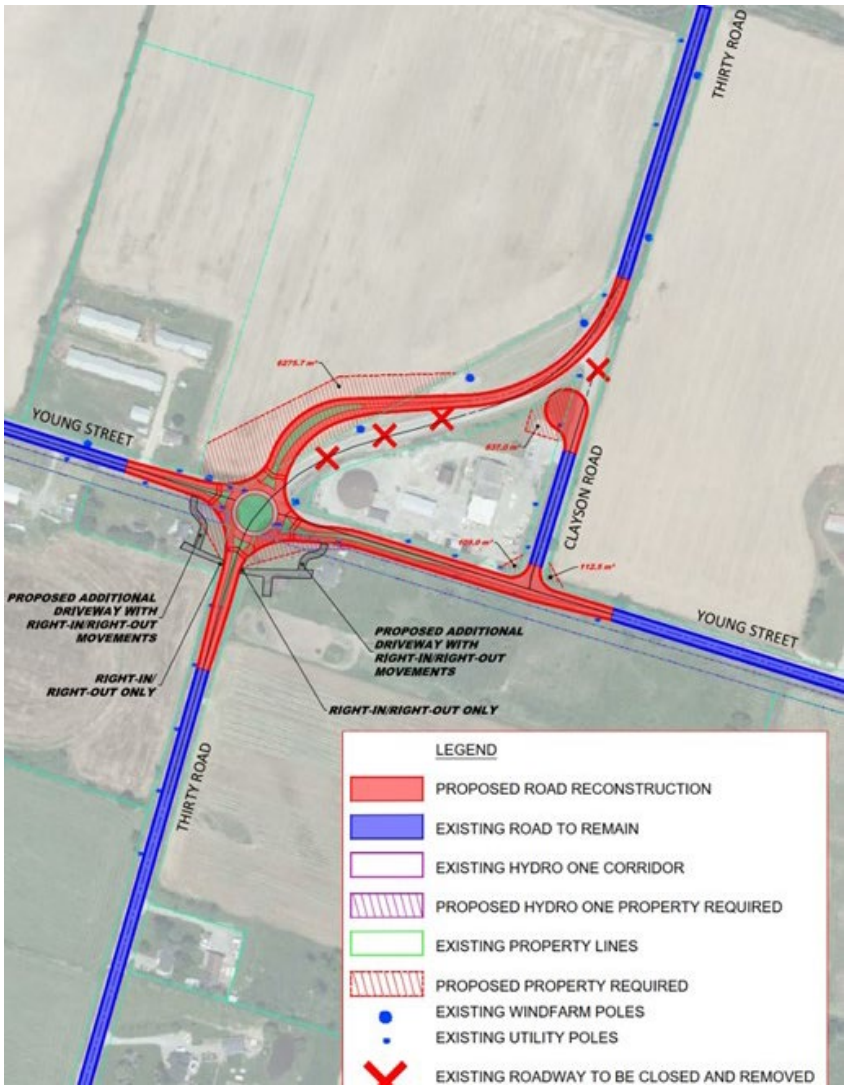


Figure ES 2 Preferred Design Concept - Alternative 5

## Impacts, Mitigation and Monitoring

The key impacts associated with the implementation of the proposed design concept and general mitigation required have been identified. In addition to the mitigation measures identified in the report, additional work will be required to be completed prior to construction. During detailed design, findings from the Class EA will be confirmed through additional investigations, planning, and consultation with the key interested groups and technical agencies.

## Preliminary Construction Timing and Cost Estimates

Construction timelines have not been developed for the preferred design concept as this will be determined based on the Niagara Region's capital budget and subject to Council approval.

A preliminary cost estimate has been prepared for the construction of the recommended design. The preliminary cost estimate to complete the reconstruction of the roadway and intersection for the preferred design is $8,326,878.05 including HST.

Table ES 1 Preliminary Cost Estimate for the Recommended Design

| Item | Cost |
|---|---|
| General | $500,000 |
| Roads | $2,063,205 |
| Storm Sewers | $250,000 |
| Electrical | $600,000 |
| Provisional Items | $50,000 |
| Utility Relocations – Bell | $150,000 |
| Utility Relocations – NPEI | $200,000 |
| Utility Relocations – Enbridge Gas | $255,000 |
| Utility Relocations – Cogeco | $75,000 |
| Utility Relocations - NRBN | $50,000 |
| **Subtotal** | **$4,193,205** |
| Contingency (30%) | $1,257,961.50 |
| Engineering (30%) | $1,257,961.50 |
| Non-recoverable HST (1.0176%) | $42,670.05 |
| Property Acquisition Costs (7875.4m$^2$) | $1,575,080.00 |
| **Total (Including HST)** | **$8,326,878.05** |

# 1.0 INTRODUCTION AND BACKGROUND

## 1.1 Introduction

R.V. Anderson Associates Limited (RVA) has been retained by the Niagara Region to complete a Schedule 'C' Municipal Class Environmental Assessment, Detailed Transportation Assessment, and Preliminary Design for the potential re-alignment and intersection improvements of Thirty Road (Regional Road 14) at Young Street, in the Township of West Lincoln. The main objective of this study is to address road safety requirements and assess the existing road capacity and future travel demand.

## 1.2 Study Area

The study area for the intersection of Thirty Road and Young Street is located within the Township of West Lincoln, to the north of the Town of Smithville's urban growth boundary. The Study Area is comprised of the following areas:

- 600 metres north of Young Street,
- 250 metres east of Thirty Road,
- 250 metres south of Young Street, and
- 250 metres west of Thirty Road.

The study area is illustrated below in Figure 1.1.

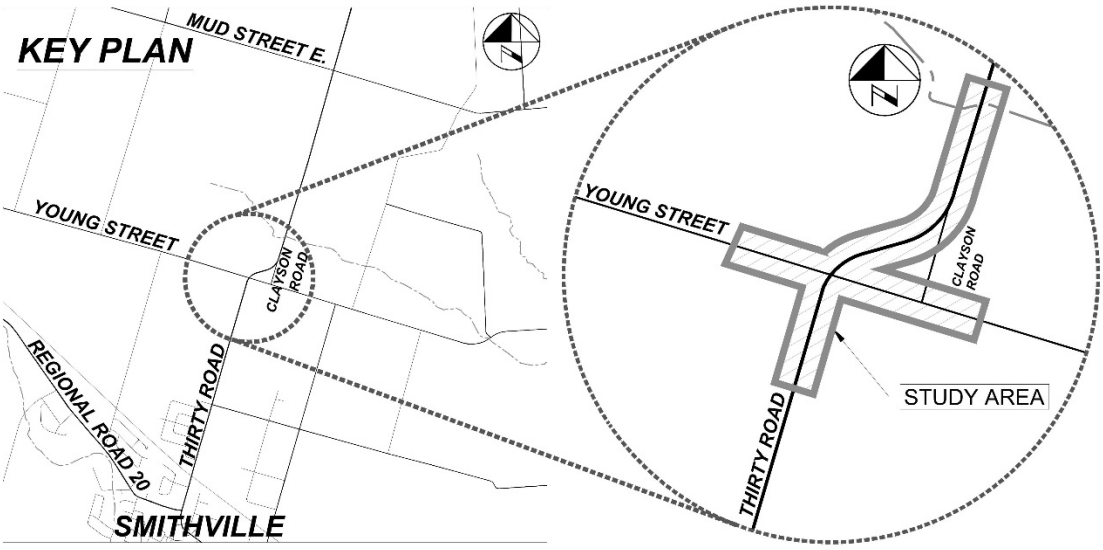


Figure 1.1 Study Area

The segment of Thirty Road (RR 14) within the study area spans an approximate distance of 850 metres with ultimate Right of Way (ROW) of 26.2 m as per the Niagara Region's Official Plan (OP) Table 9-1 Road Allowance Widths. Thirty Road is a two-lane rural undivided arterial road with posted speeds of 80 km/h (northerly) and 60 km/h (southerly). The speed limit transition occurs at a point approximately 400 metres north of its intersection with Young Street. Thirty Road within the study area carries an average annual daily traffic (AADT) volume of approximately 4300 vehicles. Adjacent land use is a mix of agricultural with a low number of residential driveways abutting Thirty Road. The North segment of the Thirty Road intersects with a type 2 watercourse and associated floodplain.

The segment of Young Street within the study area spans an approximate distance of 500 metres with an approximate right-of-way width of 20 metres with 10 metres additional extension on south side for Hydro line. Young Street functions as a two-lane, rural undivided municipal road with posted speed of 80 km/h and carrying a 2018 AADT volume of 1909 and 808 vehicles to the west and east of Thirty Road respectively. Adjacent land use is a mix of agricultural with a low number of residential driveways abutting Young Street including a horse-riding school on east side. To support the agricultural lands and protect natural heritage system, the Greenbelt Plan is extended to northeast corner of the intersection and limited to the east edge of Thirty Road and the north side of the Young Street.

In the presence of a windfarm in West Lincoln, new hydro transmission line poles exist to the west of Young Street and along the reverse curve on Thirty Road. The Hydro line continues along the east side of Thirty Road towards north of the intersection.

## 1.3 Background

Thirty Road is a two-lane north-south regional roadway that approaches Young Street by a reverse curve from the north through agricultural land and a hydro line corridor. Young Street is a two-lane rural municipal arterial road that extends in the east-west direction and provides a corridor for local traffic and farm vehicles.

The main function of Thirty Road is to move traffic from Queen Elizabeth Way (QEW) in the north to the community of Smithville in the south. Based on regional records, frequent collisions are occurring along Thirty Road and at the intersection with Young Street. Most collisions were failing to yield the right of way under dry weather conditions.

Niagara Region is committed to implementing the overall goals of the Niagara Region's Transportation Master Plan (TMP) as part of its transportation capital projects; therefore, consideration for the implementation of suitable active transportation facilities as per accepted industry standards and best practices for complete streets is required.

In 2016, and in response to public concerns regarding intersection safety, the Region retained CIMA Canada Inc. to undertake an In-Service Road Safety Review (ISRSR) of Young Street & Thirty Road. The purpose of the study was to assess safety conditions of the subject intersection and identify any feasible opportunities for improvement.

## 1.4 Study Objectives

The Class Environmental Assessment (EA) was completed in response to public concerns regarding intersection safety and the results of the ISRSR. Key study objectives include:

- Completing a Schedule 'C' Class EA to identify a preferred design for the intersection and potential roadway re-alignment that improves traffic operations and road user safety with key considerations for truck and farm vehicle maneuverability.
- Undertake robust public and technical agency engagement to achieve community and stakeholder consensus on the preferred solution and design concept and potential impacts to businesses, residents, and key interested groups in the area.
- Review and evaluate alternative solutions and design concepts to mitigate identified operational and safety concerns of the corridor and intersection.

## 1.5 Municipal Class Environmental Assessment Process

This study was conducted in accordance with the requirements of the MCEA Schedule 'C', which is an approved process under the *Environmental Assessment Act*. Under the EA Act, projects are classified as exempt, subject to an approved Class EA process, or subject to a full Individual Environmental Assessment. This environmental assessment was conducted in accordance with the requirements for a Schedule 'C' Project (Phases 1 to 4) as outlined in the Municipal Engineers Association's Class EA document (Municipal Engineers Association, October 2000, amended in 2007, 2011, 2015, and 2023).

Exempt Projects include various municipal maintenance, operational activities, rehabilitation works, minor reconstruction or replacement of existing facilities, and new facilities that are limited in scale and have minimal adverse effects on the environment. These projects were formerly classified as Schedule A and A+ projects. These projects are exempted from the requirements of the Environmental Assessment Act (Ontario, 1990).

**Schedule B** includes projects that involve improvements and minor expansion to existing facilities. There is a potential for some adverse environmental impacts and, therefore, the proponent is required to proceed through a screening process, including consultation with those affected. Schedule B projects are required to proceed through Phases 1, 2 and 5 of the Class EA process.

**Schedule C** includes projects that involve construction of new facilities and major expansion of existing facilities. These projects proceed through the environmental assessment planning process outlined in the Class EA document and are required to fulfil the requirements of the Class EA process including Phases 1, 2, 3, and 4 (part of this study), and Phase 5 which will be initiated following completion of this study.

Figure 1.2 illustrates the framework for the Class EA process which is a legislated planning process comprising of up to five phases with mandatory points of public contact. The focus of the framework is a comprehensive and transparent decision-making process.

The Class EA is broken down into phases, as follows:

- **Phase 1 – Problem or Opportunity Statement:** Identify problem or opportunity;
- **Phase 2 – Alternative Solutions:** Identify alternative solutions to address the problem or opportunity, evaluate, and select the preferred solution;
- **Phase 3 – Alternative Design Concepts for the Preferred Solution:** Identify alternative design concepts, evaluate, and select the preferred design concepts;
- **Phase 4 – Environment Study Report:** Document and file the Environmental Assessment including the design and consultation process in an Environmental Study Report (ESR) and place it on the public record; and
- **Phase 5 – Project implementation:** Complete detailed design and required additional investigations, obtain permits and approvals, contract drawings and tender documents for the project and proceed to construction and operation of the project.

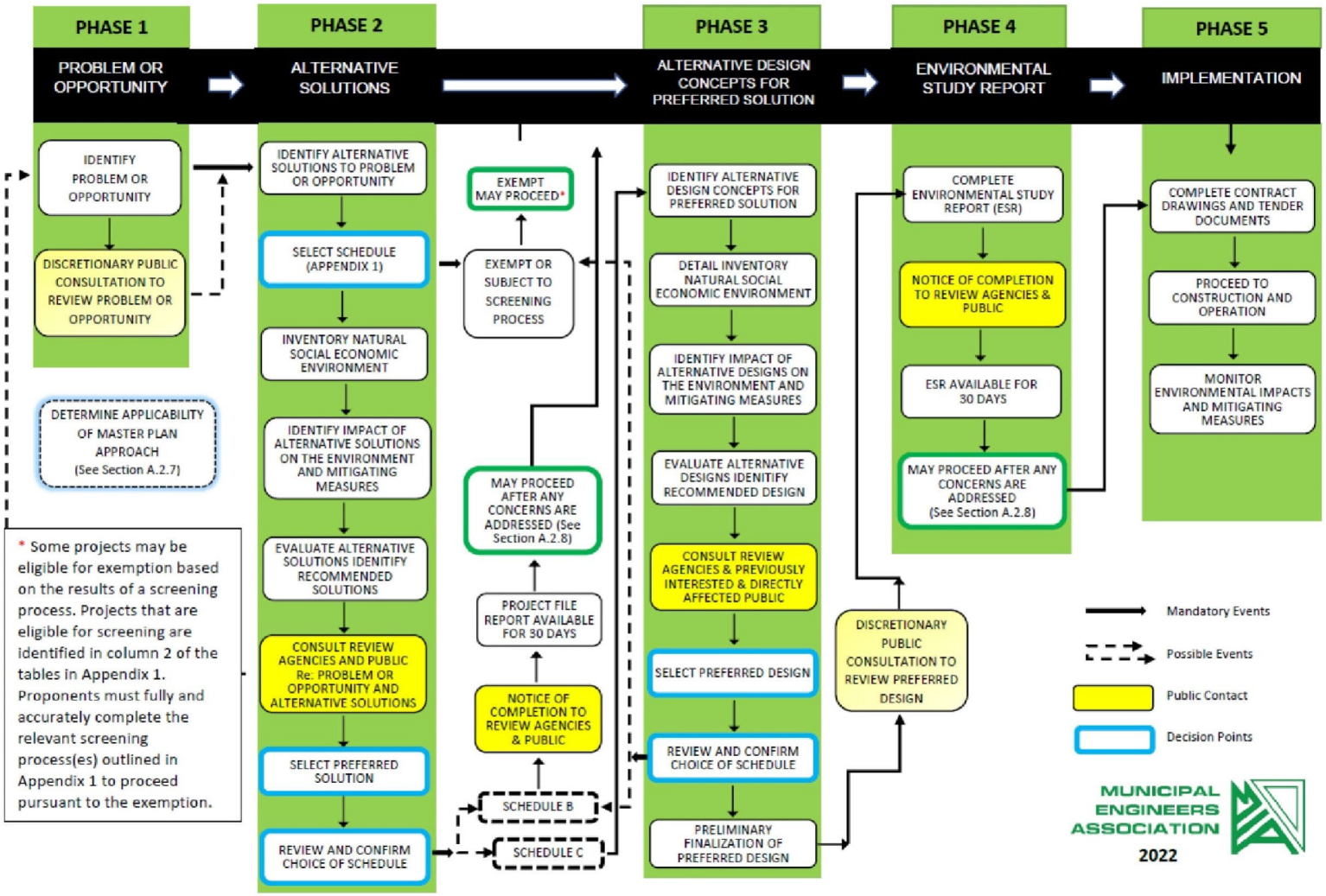


Figure 1.2 Municipal Class Environmental Assessment Process (Municipal Engineers Association, 2022)

### 1.5.1 Section 16 Order Requests

Timing for an Order Request: At the conclusion of a project, the proponent must post a Notice of Study Completion. Anyone with concerns related to any aspect of the study may submit any comments or concerns to the proponent and/or request a Section 16(6) Order within the 30-calendar day public review period following the Notice of Study Completion. During the comment period the proponent cannot proceed with the project until at least 30 days after the end of the public comment period. All comments and concerns should be sent directly to Project Manager at the Niagara Region.

The Minister of the Environment, Conservation and Parks (MECP) has the authority and discretion to make an Order under Section 16 of the Environmental Assessment Act. A request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e., requiring an Individual / comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry. This will ensure that the ministry is able to efficiently begin reviewing the request.

Prior to requesting a Section 16(6) Order, the proponent should first try to resolve any concerns directly through the Class EA process. The minister must consider the factors set out in section 16(5) of the Environmental Assessment Act. If a Section 16 Order request is made, the project proponent cannot proceed with the project until the minister makes a decision on the request. If the minister makes a Section 16 Order, the proponent may only proceed with the project if they follow the conditions in the Order.

How to make a request: To submit a Section 16(6) Order request, the following information must be provided to ensure that the ministry is able to efficiently begin reviewing the request:

- Name, address and email address;
- Project name;
- Proponent name;
- What kind of Order is being requested i.e., a request for additional conditions or a request for an individual environmental assessment;

- Details about the concerns about potential adverse impacts on constitutionally protected Aboriginal or treaty rights and how the proposed Order may prevent, mitigate potential adverse impacts on Aboriginal and treaty rights, and any information in support of the statements in the request;
- Whether the concerned party belongs to, represents or has spoken with an Indigenous community whose constitutionally protected Aboriginal or treaty rights may be adversely impacted by the proposed project;
- Whether the concerned party has raised their concerns with the proponent, the proponent's response (if any) and why the concerns could not be resolved with the proponent; and
- Any other information to support the request.

Section 16 Order requests are made to the Minister of the Environment, Conservation and Parks and the Director of Environmental Assessment Branch. The request may be submitted by mail, email, or hand delivered to the Minister:

Minister of the Environment, Conservation and Park
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Requests should also be sent to Niagara Region by mail or by e-mail.

For more information and specific instruction and details on the process, please visit:
https://www.ontario.ca/page/class-environmental-assessments-section-16-order

## 1.6 Policy and Planning

The project was completed in consideration of the policies and programs set out in relevant Provincial, Regional, and local Township of West Lincoln planning documents.

### 1.6.1 Provincial Planning Documents

#### 1.6.1.1 PROVINCIAL POLICY STATEMENT (2020)

The Provincial Policy Statement, 2020 (PPS, Ministry of Municipal Affairs and Housing (MMAH), 2020) sets the policy direction for regulating development and land use planning in the province. Both provincial and local land use planning decisions build on the PPS and its relevant policies. The policy works with land use planning systems to support the government's goals to increase housing, support jobs, and reduce red tape.

The proposed improvements within the Study Area align with the policies outlined in the PPS. Results from the Natural Environment Assessment Report indicate that no provincially significant wetlands (PSW), or Areas of Natural or Scientific Interest were identified in the Study Area. Significant importance was also given to natural environment features when evaluating alternative solutions and design concepts, ultimately recommending the design concept with minimal negative impacts, and thus in line with Section 2.0 Wise Use and Management of Resources of the PPS.

#### 1.6.1.2 A PLACE TO GROW: GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE (2020)

A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020 sets out planned designs to promote economic growth, increase housing supply, create jobs, and build communities within the Greater Golden Horseshoe area.

Recommendations from this EA study align with policies in A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020 such as Section 3.2.2, Article 2b "offer a balance of transportation choices that reduces reliance upon the automobile and promotes transit and *active transportation*". The preferred design concept includes a multi-use pathway, promoting active transportation. Furthermore, the implementation of a roundabout intersection configuration maintains traffic flow, reducing idling time and associated greenhouse gas emissions.

#### 1.6.1.3 GREENBELT PLAN (2017)

The Greenbelt Plan, 2017 sets out policies to protect agricultural lands, water resources and natural areas in Ontario's Greater Golden Horseshow region.

Lands within the eastern Study Area limits are identified as Protected Countryside and part of the Greenbelt Area (O. Reg. 59/05) under the Greenbelt Plan, 2017. Infrastructure works are permissible within Greenbelt Lands subject to the adherence of Section 4.2.1 of the

Greenbelt Plan, 2017 that includes minimizing the amount of Greenbelt Lands occupied by infrastructure and minimizing the impacts to identified natural heritage features.

### 1.6.2 Regional Planning Documents

#### 1.6.2.1 NIAGARA OFFICIAL PLAN (2022)

The Niagara Official Plan, 2022 is a long-term land use planning document that sets out lands to protect, where and how the region will grow, and policy tools for success. The policies of this Plan are intended to guide land use and development thereby influencing economic, environmental, and planning decisions until 2051 and beyond.

Policies in the Niagara Official Plan, 2022 were reviewed and considered when conducting the Natural Environment Assessment for the Study Area. Key sections considered including Section 3.1 The Natural Environment System and Section 5.1 Multimodal Transportation System.

#### 1.6.2.2 NIAGARA REGION TRANSPORTATION MASTER PLAN (2017)

The Region's Transportation Master Plan (TMP), 2017, How We Go, is a strategic planning document that defines policies, programs, and infrastructure improvements required to address transportation and growth needs from today through to 2041. The major components of the TMP are the Regional Road System; Transportation Demand Management; Transportation Systems Management; Public Transit; Active Transportation; Complete Streets; and Goods Movement.

### 1.6.3 Local Planning Documents and Policies

#### 1.6.3.1 OFFICIAL PLAN OF THE TOWNSHIP OF WEST LINCOLN (CONSOLIDATED 2021)

The Official Plan of the Township of West Lincoln provides general guidance for growth and development in the Township until 2031.

#### 1.6.3.2 SMITHVILLE MASTER COMMUNITY PLAN (ONGOING)

The Smithville Master Community Plan is a detailed land use plan and policy document that provides a comprehensive plan for sustainable future growth and expansion in the Smithville urban settlement area.

#### 1.6.3.3 SMITHVILLE TRANSPORTATION MASTER PLAN (2023)

The Smithville Transportation Master Plan, 2023 identified recommendations for new links and bypasses for the Smithville area that would have substantial impact on the Study Area

for this EA study. These recommendations were taken into careful consideration when completing the Detailed Transportation Assessment as they impact future traffic volumes and provide alternative routes for travelling. In addition, the Transportation Master Plan recommended active transportation methods for Thirty Road, which was incorporated into the preliminary design of the preferred design concept.

## 1.7 Study Organization

The Class EA study was carried out by a consulting team led by R.V. Anderson Associates Limited (RVA) on behalf of Niagara Region. The study team is outlined below:

Niagara Region:

- Transportation Planning Staff

Consulting Team:

- R.V. Anderson Associates Limited – Lead Consultant, Planning, Drainage & Stormwater Management, Engineering, and Natural Heritage
- Russel Technical Services Inc. – Topographic Survey
- Soil-Mat Engineers & Consultants Ltd. – Geotechnical and Hydrogeological Studies
- Valcoustics Canada Ltd. – Noise Assessment
- Parslow Heritage Consultancy Inc. – Archaeological & Built Heritage Assessment

## 1.8 Study Schedule

The Class EA study was initiated in November 2022. Key dates throughout the study were as follows:

| EA Stage | Date |
|---|---|
| Notice of Study Commencement | November 3, 2022 |
| Notice of PIC #1 | February 21, 2023 |
| Notice of PIC #2 | November 8, 2023 |
| Notice of Study Completion | November 4, 2024 |

## 1.9 Consultation Overview

Public consultation is a key feature of environmental assessment planning projects. Input received from the public and stakeholder groups, potentially affected Indigenous Communities, provincial ministries, technical agencies, and authorities help generate meaningful dialogue between project planners and the public.

Various Indigenous Communities, government agencies, authorities, and interest groups were informed of the Class EA Study Commencement, Public Information Centres (PICs), and Notice of Study Completion, through local newspaper notices and direct mailings (paper & electronic) to key interested groups and agencies. Notices were distributed to property owners in the study area.

A complete list of technical agencies, special interest groups, and Indigenous Communities that were contacted as part of the study is provided in Appendix 1-2 of this report.

### 1.9.1 Contact with Key Interested Groups and Indigenous Communities

As per the Class EA requirements, notifications to the public and interested groups of study commencement is required, as well as notifications of PICs. The Notification of Study Commencement, Notification of Public Information Centres (PICs), and Notice of Study Completion (forthcoming) was provided through several different methods and media, as outlined below.

- General public:
  - Project updates including study timelines, PIC dates, and PIC materials were posted on the Niagara Region's project website at https://www.niagararegion.ca/projects/regional-road-14/default.aspx.
  - All notices were published in the newspaper.
- Residents and businesses within the study area:
  - All notices were mailed to all property residents within the study area.
  - Letters to impacted properties were mailed directly to property owners/residents.
- Technical agencies, local interest groups, and Indigenous communities:
  - All notices were sent via email.
- Project Mailing List (interested groups who submitted comments or expressed interest during the study):
  - All notices were sent via email.

# 2.0 EXISTING CONDITIONS

## 2.1 Transportation

A Detailed Transportation Assessment Report documenting existing traffic volumes, road network, operations analysis, future traffic estimations, and planned network improvements within the study area was prepared by RVA's Transportation Team. Findings of the existing transportation conditions are summarized in the sections below. The full report is provided in Appendix 2.

### 2.1.1 Study Area Road Network

Thirty Road is a Regional Arterial Corridor with a rural two-lane cross-section and a 26.2m right-of-way. It has posted speeds of 80 km/h north of Young Street and 60 km/h south of Young Street. In terms of function, Based on the findings of a traffic analysis, majority of vehicles are travelling north/south along Thirty Road, with traffic anticipated to increase from the planned Smithville urban boundary expansion to the south.

Young Street is an Arterial Rural Road under the jurisdiction of the Township of West Lincoln. It also has a two-lane cross-section, a 20m right-of-way and a posted speed of 80 km/h. Prior to the current all-way stop configuration, there was a two-way stop control on Young Street at Thirty Road. Functionally, Young Street accommodates local traffic and farm vehicle activity. Based on the findings of a traffic analysis, traffic volumes are currently fairly low travelling east/west on Young Street, and it is not anticipated to increase significantly.

Clayson Road is a two-lane rural corridor under the jurisdiction of the Township of West Lincoln. The roadway is an additional link between Young Street and Thirty Road and provides access to lands in the northeast corner of Young Street and Thirty Road. Due to the curve of Thirty Road, the intersection of Clayson Road and Thirty Road exhibited a skewed intersection alignment. The existing intersection configuration is illustrated in the figures below.

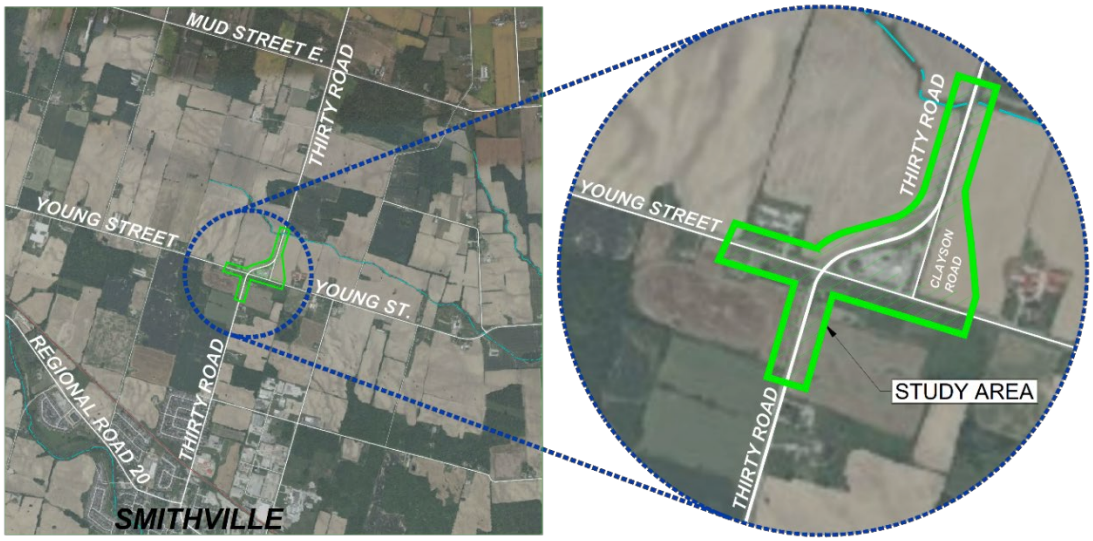


Figure 2.1 Aerial Map of Study Area


Figure 2.2 Existing Intersection Configuration

### 2.1.2 Collision History

Between 2017 and 2022, there have been 14 collisions at the intersection of Thirty Road and Young Street. This is a result of several safety issues within the general footprint of the intersection. These include:

- Reverse curve alignment of Thirty Road north of Young Street causing insufficient stopping distance for vehicles travelling southbound towards the intersection.
- Right-of-way conflicts at Thirty Road and Clayson Road as southbound traffic can either enter Clayson Road or stay on Thirty Road, creating a conflict with northbound traffic on Thirty Road.
- Westbound traffic utilizing Clayson Road as a cut-through to avoid the Thirty Road at Young Street intersection.

In response to the safety issues identified above, the Township of West Lincoln and Niagara Region implemented an all-way stop control at the Thirty Road and Young Street intersection as a short- to mid-term solution.

### 2.1.3 Existing Transportation Conditions

#### 2.1.3.1 EXISTING LANE CONFIGURATIONS

The intersection currently consists of four approaches, all of which provide a single lane with no turning restrictions. The intersection of Young Street at Clayson Road is a three-leg intersection, with Young Street serving as the southern terminus for Clayson Road. The intersection consists of a single lane on each approach with free-flow traffic along Young Street and stop-control along Clayson Road.

The intersection of Thirty Road and Clayson Road exhibits a skewed alignment, as Clayson Road intersects near the end of the reverse curve along Thirty Road. While the skewed alignment makes it unsafe for turning movements to and from Clayson Road, there is no signage or infrastructure restricting the movements. The intersection consists of a single lane for each approach with stop control along Clayson Road. Further existing lane configurations are described in the Detailed Transportation Assessment provided in Appendix 2.

#### 2.1.3.2 EXISTING TRAFFIC VOLUMES

Through analysis of the 8-hour counts for the entire study area, the morning and afternoon peak hours for existing traffic volumes have been identified from 7:45am to 8:45am, and 4:15pm to 5:15pm, respectively. The morning and afternoon peak hour volumes are presented in Figure 2.3.

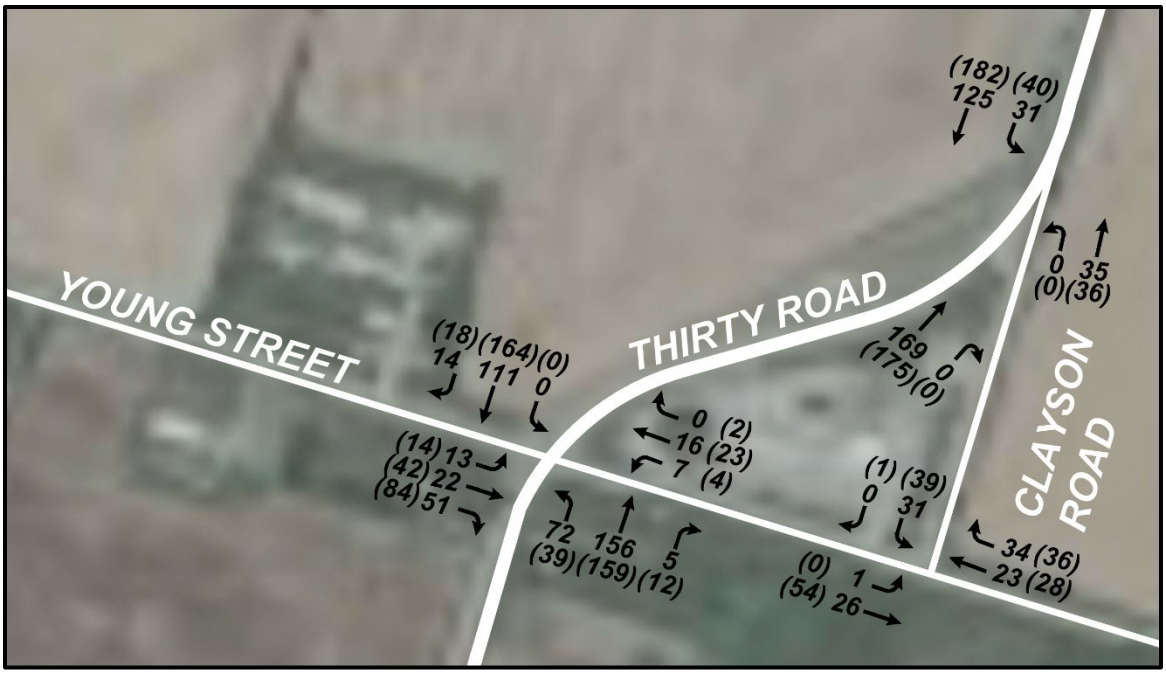


Figure 2.3 Existing (2022) Traffic Volumes

An all-way stop warrant analysis for the Thirty Road at Young Street intersection was performed, which concluded that an all-way stop control was not warranted at this intersection. However, due to the sightline and safety issues described in Section 2.1.2 above, a decision was made to implement all-way stop signs under existing conditions.

### 2.1.3.3 TRAFFIC OPERATIONS ANALYSIS

Traffic operations analysis has been undertaken for the existing (2022) traffic operations; the results of this analysis are summarized in Table 2.1.

Table 2.1 Existing (2022) Conditions - Traffic Operations Analysis Results

| **Intersection** *Traffic Control* | **Movement** | **Peak Hour** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Weekday AM** | | | | **Weekday PM** | | | |
| | | **V/C** | **LOS** | **Delay (s)** | **95%tile Queue (m)** | **V/C** | **LOS** | **Delay (s)** | **95%tile Queue (m)** |
| **Thirty Road & Young Street** *All-Way Stop Control* | EBLTR | 0.32 | A | 9.6 | 1.4 | 0.30 | A | 9.6 | 1.2 |
| | WBLTR | 0.12 | A | 8.1 | 0.4 | 0.20 | A | 8.7 | 0.7 |
| | NBLTR | 0.04 | A | 8.2 | 0.1 | 0.05 | A | 8.4 | 0.1 |
| | SBLTR | 0.18 | A | 8.6 | 0.6 | 0.26 | A | 9.2 | 1.0 |
| | Intersection | - | A | 9.0 | - | - | A | 9.2 | - |
| **Young Street & Clayson Road** | EBTL | 0.00 | A | 0.3 | 0.0 | 0.00 | A | 0.0 | 0.0 |

| Intersection<br>*Traffic Control* | Movement | Peak Hour | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Weekday AM | | | | Weekday PM | | | |
| | | V/C | LOS | Delay (s) | 95%$^{tile}$ Queue (m) | V/C | LOS | Delay (s) | 95%$^{tile}$ Queue (m) |
| *Minor Stop Control* | WBTR | 0.04 | A | 0.0 | 0.0 | 0.04 | A | 0.0 | 0.0 |
| | SBLR | 0.04 | A | 9.2 | 1.0 | 0.05 | A | 9.3 | 1.2 |
| | Intersection | - | A | 2.6 | - | - | A | 2.3 | - |
| **Thirty Road & Clayson Road**<br>*Minor Stop Control* | WBLR | 0.05 | A | 9.5 | 1.1 | 0.05 | A | 9.5 | 1.2 |
| | NBTR | 0.11 | A | 0.0 | 0.0 | 0.11 | A | 0.0 | 0.0 |
| | SBTL | 0.02 | A | 1.7 | 0.6 | 0.03 | A | 1.6 | 0.8 |
| | Intersection | - | A | 1.7 | - | - | A | 1.6 | - |

For the intersections of Thirty Road & Clayson Road, as well as Young Street & Clayson Road, both intersections are operating with substantial reserve capacity, nominal delays, and no queuing concerns under existing conditions. Further details on existing transportation conditions are provided in the Detailed Transportation Assessment in Appendix 2.

### 2.1.4 Future Conditions

#### 2.1.4.1 TRAFFIC GROWTH RATE

A screenline analysis has been completed in the proximity of the intersection, north and south of Young Street, using link volumes from the Regional EMME model output. These link volumes are summarized in Table 2.2.

Table 2.2 Traffic Growth Rates - EMME Model Data

| Roadway Name | Movement | Analysis Scenario | | | | Traffic Growth Rate |
|---|---|---|---|---|---|---|
| | | 2016 | | 2041 | | |
| | | Weekday AM | Weekday PM | Weekday AM | Weekday PM | |
| Thirty Road (RR 14) | Northbound | 494 | 474 | 814 | 846 | 2.3% |
| | Southbound | 489 | 473 | 834 | 918 | 2.7% |
| Young Street | Eastbound | 8 | 11 | 12 | 18 | 2.0% |
| | Westbound | 15 | 26 | 25 | 76 | 4.4% |

Based on the results of the screenline analysis, in addition to consultation with Regional staff, a conservative growth rate of 2.5% has been adopted for the study area. The resulting 2041 traffic volumes are shown in Figure 2.4. Further details are provided in Appendix 2.


Figure 2.4 Future (2041) Volumes (Annualized Growth Rate Only)

#### 2.1.4.2 FUTURE TRANSPORTATION PLANNED NETWORK IMPROVEMENTS

As part of the Smithville Transportation Master Plan (January 2023), several recommendations for new links and bypasses have been made for the Smithville area. The following two (2) recommendations would have a substantial impact on the volumes in the study area and are as follows:

- Implement a new connector road that travels east-west along the existing hydro corridor, from Industrial Park Road to Regional Road 20; and
- Provide approximately one kilometre extension to Spring Creek Road that travels west and eventually curves north to intersect with the new connector road noted above.

The implementation of these corridors would provide alternative routes for east-west travel and would significantly reduce volumes along Young Street as a result. However, given the uncertainty of timelines for these projects, the traffic analysis adopted the existing road network for future volume projections.

## 2.2 Socio-Economic Environment

The intersections of Thirty Road and Young Street and Thirty Road and Clayson Road are situated in a rural area surrounded by agricultural and residential land uses. This includes

the Niagara Peninsula Tender Fruit and Grape Area, which is a specialty crop area, and prime agricultural lands. There are also good general agricultural lands surrounding the intersection as well as Greenbelt lands. Lands south of Young Street are designated to be within the future Smithville Urban Boundary Expansion.

### 2.2.1 Noise Assessment

A Noise Impact Assessment was completed by Valcoustics Canada Ltd. to identify possible noise impacts from road traffic at Noise Sensitive Areas (NSAs) resulting from the proposed improvements. Additionally, the need for noise mitigation was also evaluated.

4 residential dwellings within the Study Areas were identified as NSAs. At each NSA, the daytime sound levels were assessed and found to be at or below 55 dBA. The results of the assessment indicate the predicated noise impact due to the proposed improvements is less than 5 dBA and the future daytime sound levels are less than 60 dBA at all NSAs, therefore, noise mitigation is not required in accordance with the Niagara Region and MTO requirements.

The full report is provided in Appendix 7.

## 2.3 Natural Environment

A Natural Environment Assessment (NEA) Report documenting existing environmental conditions within the study area and potential effects of the proposed project on natural heritage features was prepared by RVA's Ecological Services Team. Findings of their report are summarized in the sections below. The full report is provided in Appendix 3.

### 2.3.1 Key Natural Heritage Features

Designated natural areas include areas identified for protection by the Ontario Ministry of Natural Resources and Forestry, Township of West Lincoln, and the Region of Niagara.

No provincially or locally designated parks, conservation areas, reserves, provincially significant wetlands (PSW), or Areas of Natural or Scientific Interest (ANSI) were identified in the Study Area. The Township of West Lincoln Natural Heritage System is identified within a section of the Study Area, generally aligning with the regulation limits of the NPCA, coinciding with potential fish habitat and water resources systems. In addition, lands within the eastern Study Area limits are identified as Protected Countryside and part of the Greenbelt Area (O. Reg. 59/05) under the Greenbelt Plan (2017).

### 2.3.2 Vegetation

The Study Area is within a landscape that is primarily rural and dominated by agricultural land use interspersed with residential areas. Aside from these areas, the dominant natural/successional vegetation community within the Study Area is classified as Mineral Cultural Meadow (CUM1) associated with the road right of way (ROW) and meadow communities off the roadside. This community is dominated by both common native and non-native forb and grass species in the ground layer and sparse numbers of pioneering shrubs and small trees.

A shrub dominated Mineral Cultural Thicket (CUT1) community is located within the eastern extent of the Study Area on the south side of Young Street. The canopy of this community is dominated Hawthorn (Crataegus spp.), Gray Dogwood (Cornus racemosa) and young American Elm (Ulmus americana). The lower layer is comprised primarily of forbs including Late Goldenrod (Solidago altissima), Cow Vetch (Vicia craca), and Teasel (Dipsacus fullonum).

### 2.3.3 Wildlife and Wildlife Habitats

Candidate significant wildlife habitats with potential to occur within the Study Area (i.e. were not confirmed but could not be ruled out following field investigations) consist of Species at Risk (SAR) Bat maternity roosting habitat (treed communities).

The field studies completed within the Study Area were compared to the known habitat preferences and general locations of SAR to determine the potential that these species or their habitat could occur in the Study Area. No SAR individuals nor suitable habitat were identified during the completed field investigations within the Study Area.

### 2.3.4 Fish and Fish Habitats

A watercourse located towards the northern extent of the Study Area flows southeast through agricultural fields towards the main branch of Spring Creek, east of the Study Area. Although fish were not observed, the Spring Creek tributary appears to provide intermittent flow that may function as direct fish habitat. Given the channel's downstream connection to Spring Creek, the watercourse likely supports a warmwater tolerant fish community.

### 2.3.5 Wetlands

There are no Provincially Significant Wetlands (PSW) or other identified locally significant wetlands within the Study Area. Sections of the Lower Twenty Mile Creek Wetland Complex PSW are located on adjacent lands southwest, northeast, and southeast of the Study Area

(Map 2). A wetland feature was identified during field work within the Study Area associated with the riparian areas along the tributary of Twenty Mile Creek, characterized by Cattail species (Typha sp.) and other hydrophilic species.

### 2.3.6 Source Water Protection and Hydrologic Features

The Study Area is located within the Twenty Mile Creek subwatershed, under the jurisdiction of the Niagara Peninsula Conservation Authority (NPCA) and the Ministry of Natural Resources and Forestry Vineland District office.

There is one watercourse located towards the northern extent of the Study Area flows southeast through agricultural fields towards the main branch of Spring Creek, east of the Study Area. The tributary is conveyed under Thirty Road by a concrete box culvert. Although the creek banks were not well defined, the creek appeared to be channelized.

Under the MECP 2006 Clean Water Act, municipalities are required to conform to Source Protection Plans (SPPs) to protect surface and groundwater sources to municipal drinking water systems. The Study Area for this project is under the jurisdiction of the Niagara Peninsula Source Protection Area. The Niagara Peninsula SPP identifies where there is potential for significant threat to the quality and quantity of groundwater through delineation of Wellhead Protection Areas (WHPAs), Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), and Intake Protection Zones (IPZs).

The Study Area is not within a Significant Groundwater Recharge Area (SGRA) but is marginally within an area identified as a Highly Vulnerable Aquifer (HVA), associated with the tributary of Spring Creek and its floodplain. There are no WHPAs or IPZs within the Study Area.

## 2.4 Cultural Heritage Environment

Section 2.4 describes the existing conditions of the cultural heritage component of the environment. Cultural heritage resources include archaeological resources, built heritage resources and cultural heritage landscapes.

### 2.4.1 Archaeological Resources

A Stage 1 Archaeological Assessment (under Project Information Form number (PIF) P1153-0071-2023) of the Study Area was completed on February 23, 2023, by Parslow Heritage Consultancy Inc. Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, and contacting MCM to find out whether, or not, there are any known archaeological sites on or near the

property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g., Stage 2-4) as necessary.

Background research of the Study Area has shown that no archaeological sites were found within the minimum one-kilometre distance from the Study Area. The background research also revealed two homesteads marked within the Study Area and most of the area being dedicated to agricultural activities.

The complete Stage 1 Archaeological Assessment found significant portions of the Study Area to be of archaeological potential and recommends a Stage 2 Archaeological Assessment for those areas if included in the preferred design concept. Further details regarding the study's results and recommendations are described in Section 8.4.1 of this report and in the full Stage 1 Archaeological Assessment report provided in Appendix 5.

Any further recommended archaeological assessment (e.g., Stage 2, 3, 4) shall be completed during detailed design and prior to any ground disturbing activities.

### 2.4.2 Built Heritage Resources and Cultural Heritage Landscapes

A Cultural Heritage Assessment Report (CHAR) was prepared within the study area by Parslow Heritage Consultancy Inc. to identify known (previously recognized) and potential built heritage resources and cultural heritage landscapes (BHR/CHL).

Results of the CHAR identified two properties of potential cultural heritage value:

1. 3093 Thirty Road
2. 6285 Young Street

Based on the results of the above-mentioned report, it is recommended that both properties be subject to a property-specific Cultural Heritage Evaluation Report (CHER) prior to any impacts to or adjacent to the property. The property-specific CHER would identify if the property is of cultural heritage value or interest and would develop a Statement of Significance and list of heritage attributes. If heritage attributes are identified through the CHER, a Heritage Impact Assessment (HIA) will be conducted during detailed design to specifically assess the impacts of the proposed improvements to the properties.

The full report is provided in Appendix 4.

## 2.5 Geotechnical Investigation

A geotechnical investigation was undertaken by Soil-Mat Engineers & Consultants Ltd. to assess the existing pavement structure and subsurface soil conditions, and to provide

recommendations with respect to the design and construction of the proposed intersection improvements. The complete Geotechnical Assessment Report prepared is provided in Appendix 6.

A total of ten (10) sampled boreholes were advanced in the Vicinity of the Study Area and an additional six (6) borehole logs were provided to Soil-Mat by RVA advanced along Young Street.

### 2.5.1 Pavement Structure

A general description of the existing pavement and subsurface conditions is presented as follows:

- Pavement structure of the existing roadway consisted of 75 to 275 millimeters of asphaltic concrete, overlaying 175 to 250 millimeters of compact granular base materials.
- Native silty clay/clayey silt was encountered beneath the pavement structure at all borehole locations and beneath the surficial topsoil layer at all test pits.
- It is noted that the upper levels of the silty clay/clayey silt encountered generally had a reworked or weathered appearance and may be disturbed or fill associated with the construction of the roadway, underground infrastructure.
- In addition to the boreholes, a series of test excavations were advanced within the field. The upper levels of the soil encountered at the test pit locations within the field were also disturbed, likely due to the agricultural activities.

### 2.5.2 Groundwater Observations

All of the boreholes were noted to be open and ‘dry’ upon completion of drilling. In the silty clay/clayey silt encountered, the static groundwater level typically coincides with the transition in colour from brown to grey. The static groundwater level is conservatively estimated at depths of three (3) to four (4) meters, below the anticipated depths of construction. Shallower perched deposits of water within the permeable seams, and from surface runoff should be anticipated, especially during the ‘wet’ times of the year.

## 2.6 Servicing, Utilities, and Facilities

### 2.6.1 Utilities

The following utilities are present in the immediate vicinity of the Thirty Road and Young Street intersection:

- Niagara Peninsula Energy Inc. (NPEI)
  - NEPI has local utility poles along both sides of Young Street.
- Niagara Region Broadband Network (NRBN)
  - NRBN has fibre optic lines that run on the NPEI hydro poles along Young Street and continue through the Thirty Road and Young Street intersection.
  - There are fibre optic lines heading south onto Thirty Road.
- Hydro One
  - Hydro One has a corridor for future transmission poles along the south side of Young Street.
- Bell
  - Large Bell cabinet in the northeast corner
  - Small Bell pedestal in the southeast corner of the intersection
  - Interface panel in the northeast corner of the intersection
  - Existing Bell conduits/lines on the south, east, and west legs of the Thirty Road and Young Street intersection
  - The existing Bell conduits/lines run along Young Street to the east, past Clayson Road, and along Clayson Road, continuing north along Thirty Road.
- Enbridge Gas
  - There are Enbridge Gas lines along Young Street and Thirty Road.
- Other Utilities
  - There is a small cable pedestal in the southeast corner of the intersection.

#### 2.6.1.1 HYDRO ONE

There is a vacant Hydro one corridor south of Young Street. The Hydro One corridor extends along the south side east of Clayson Road for 400 metres.

In consultation with Hydro One, they expressed safety concerns if a roundabout intersection is considered for Thirty Road and Young Street as the roundabout will encourage vehicles to slow down considerably or stop underneath the transmission line for prolonged periods of time. This configuration would increase the risk to road users from objects falling from the transmission line, for example ice in the winter.

Hydro One noted an initial preference for a standard intersection configuration and accompanying infrastructure to be implemented outside of their right-of-way.

#### 2.6.1.2 NIAGARA REGION WIND FARM POLES

The Niagara Region Windfarm, in partnership with Six Nations of the Grand River Development Corporation, owns large high-voltage transmission poles adjacent to the Thirty Road and Young Street intersection. These poles pose a significant constraint when considering any intersection re-configuration as they are extremely costly to relocate and would result in significant environmental and property impacts.

### 2.6.2 Drainage and Stormwater Management

Currently, drainage is conveyed by shallow roadside ditches along the corridor which experience seasonal ponding. There is a concrete box culvert about ½ km north of Young Street that conveys a tributary of Spring Creek flowing east under Thirty Road.

Lands surrounding the Spring Creek tributary are within an NPCA regulated floodplain with an elevation of 192.52m and as such, lands on both sides of Thirty Road north of Young Street experience seasonal flooding. Any additional impervious surfaces such as new roads through those lands would need to ensure there are no negative impacts to the floodplain.

### 2.6.3 Municipal Services

Since the Study Area is located in a rural setting, there are no locally owned municipal services (no local watermains, sanitary sewers or storm sewers) on Thirty Road nor Young Street. However, there is a Regional-owned 450mm diameter trunk watermain and a 400mm diameter sanitary forcemain on Young Street.

# 3.0 PROBLEM AND OPPORTUNITY STATEMENT

Per Phase 1 requirements of the Municipal Class Environmental Assessment process for a schedule 'C' project, a "Problem and Opportunity Statement" was prepared to identify in detail the various problems and opportunities to be addressed by the study. In essence, the Problem Statement outlines the need and justification for the overall project and establishes the general parameters, or scope, of the study.

The Problem Statement was developed following the assessment of the existing conditions within the study area, as described in Section 2.0, along with having discussions with Niagara Region staff regarding transportation infrastructure and traffic safety and operation needs; and through consultation with the public and technical agencies undertaken throughout the study.

The problem and opportunity statement for this Class EA study is summarized as follows:

*The area of Thirty Road at Young Street and Thirty Road at Clayson Road requires geometric improvements to address safety issues for all users due to:*

- *Reverse curve alignment of Thirty Road north of Young Street causing insufficient stopping sightline distance at Young Street and maneuverability issues for larger farm vehicles and commercial trucks;*
- *Right-of-way conflict at Thirty Road and Clayson Road;*
- *Westbound traffic utilizing Clayson Road as a cut-through to avoid the Thirty Road at Young Street intersection; and*
- *Lack of pedestrian and cyclist facilities.*

*The Niagara Region is committed to creating a safe, integrated, and environmentally sustainable transportation system. The Region is taking this opportunity to address the identified road safety and issues through geometric design and traffic operation improvements.*

# 4.0 ALTERNATIVE SOLUTIONS (PHASE 2)

Under Phase 2 of the Class EA process, all reasonable solutions to address the problem and opportunity are identified and described, including the "Do Nothing" alternative. After general inventories of the technical, natural, social, cultural, and economic environments are prepared and potential environmental impacts are determined for each alternative, the net positive and negative effects are identified, and the alternatives are evaluated resulting in a recommended solution. The recommended solution is then presented to the public (Public Information Centre #1), Indigenous Communities, key interested groups, and government review agencies to solicit input into the selection of the "preferred solution".

## 4.1 Evaluation Criteria

The Project Team considered criteria that represent the broad definition of the environment as described in the Environmental Assessment Act to comparatively evaluate the alternative solutions. The general evaluation criteria used in evaluating the alternative solutions and design concepts are outlined in the table below.

Table 4.1 Evaluation Criteria for Alternative Solutions

| Evaluation Criteria | Description of Evaluation Criteria |
|---|---|
| Traffic Operations & Safety | Does the alternative improve the safety (sightlines, stopping distance, conflict) of the intersection? How will the alternative serve the existing and future vehicular (car, truck and farm vehicle), pedestrian and cycling traffic needs? |
| Socio-Economic Environment | What impacts will the alternative have on the local community (e.g., compatibility with current and planned area land use, impacts on rime agricultural lands, property requirements, access restrictions, etc.)? |
| Natural Environment & Climate Change | How does the alternative affect existing vegetation, floodplain, water quality, fisheries/wildlife, and habitat? Does the alternative address climate change? |
| Cultural Heritage Resources | Will the alternative affect archaeological, cultural heritage resources or Indigenous communities? |
| Costs | What is the capital cost of the alternative? What is the cost for utility relocations, property acquisitions, maintenance, and operation costs? |

### 4.1.1 Traffic Operations and Technical Criteria

The traffic operations and technical criteria evaluate the degree to which the proposed solutions accommodate the existing and future transportation vehicular, pedestrian, cyclist, and municipal servicing needs of the corridor. These criteria are meant to evaluate how well

the solution solves technical road safety, operations, connectivity, and municipal servicing aspects of the problem and opportunity statement for all road users.

- Intersection Capacity and Operations: The ability of the solutions to accommodate existing and future vehicle operations and improve potential traffic congestion and Level of Service (LOS).
- Traffic Safety: The ability of the solutions to improve the road safety of the intersection and address safety concerns identified in the problem and opportunity statement.
- Right-of-Way Conflicts Addressed: Whether the solutions address the right-of-way conflicts for Thirty Road and Clayson Road.
- Sight Lines Issue Addressed: Whether the solution addresses sight line issues for eastbound and westbound traffic on Young Street and stopping sight distance for southbound traffic on Thirty Road.

### 4.1.2 Socio-Economic Environment Criteria

Socio-economic criteria represent the effect a solution will have on the local human environment. Overall, the solution should have a positive effect on the functioning of the community without imposing an economic burden or altering the community's sociocultural fabric.

- Direct and Indirect Property Impacts: Direct and indirect impacts to private property required to implement the solution, including encroachment toward private property, land acquisition, and/or impacts to existing buildings.
- Impacts to Agricultural Lands (Prime and Specialty Crop Area): The extent to which the solutions impact adjacent agricultural lands.
- Illumination: The extent to which additional illumination is required to ensure road user safety at the intersection.
- Noise & Air Quality Impacts: Potential impacts related to the solution design and construction for noise and air quality pollution.

### 4.1.3 Natural Environment and Climate Change Criteria

Natural environment and climate change criteria evaluate the degree to which the solution impacts the natural environment, with emphasis on those sensitive areas that are most critical to human or ecological functions and are most likely to be disturbed, and the degree to which the solution contributes to and is resilient to climate change.

- Impacts to Water Quality Including Regulated Floodplain, Highly Vulnerable Aquifer & Spring Creek Watercourse: Potential impacts related to the solution design and construction for floodplains, regulated watercourses, aquifers, and Spring Creek.
- Impacts to Greenbelt Lands: Potential impacts related to the solution design and construction for nearby Greenbelt lands.
- Environmental Footprint / Vegetation Impacts Including Natural Heritage System Lands: Potential impacts related to construction and operations for terrestrials, ecosystems, vegetation, and natural heritage.
- Climate Change: Impacts that contribute or mitigate the effects of climate change.

### 4.1.4 Cultural Heritage Resources Criteria

Cultural Heritage Resources criteria evaluate the degree to which the solution impacts the built cultural heritage and archaeological resources within the study area.

- Impacts to Areas of Archeological Potential: Possible impacts to areas of archaeological potential within the study area.
- Impacts to Cultural Heritage Resources: Potential impacts to the built cultural heritage resources within and adjacent to the corridor.

### 4.1.5 Financial Criteria

Financial criteria is defined as the cost of the solution to the City regarding construction, property acquisition costs, and utility relocation costs.

- Construction Cost: Cost of the construction of the solution.
- Property Acquisition Cost: Cost of property acquisitions required to implement the solution.
- Utility Relocation Cost: Cost of relocating utility poles to implement the solution.

## 4.2 Evaluation Methodology and Ranking System

The project team comparatively ranked each alternative solution from least desirable (highest negative impacts) to most desirable (lowest negative impacts), for each of the criteria described above, to determine the preliminary preferred solution(s). Alternative solution represented by a full dark circle symbol were given the highest score where the evaluation criteria resulted in the lowest anticipated impacts, or most desirable. Figure 4.1 demonstrates the rating scale used in the evaluation of alternative solutions described below.

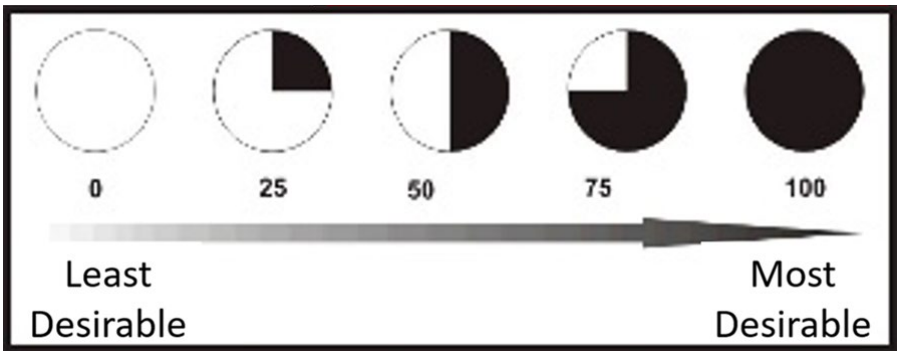


Figure 4.1 Alternatives Ranking Scale

## 4.3 Thirty Road at Young Street Intersection Alternative Solutions

This section documents the alternatives considered to address traffic operations and safety concerns, sightline issues, stopping distance issues, and right-of-way conflicts at Clayson Road within the study area.

### 4.3.1 Alternative 1: Do Nothing

With the Do Nothing alternative, the intersection remains as is, with no improvements undertaken (prior to the all-way stop temporary solution). This alternative is required to be considered as part of the EA planning and design process and serves as a baseline comparison for all other alternatives. This alternative does not address the insufficient stopping and sightline distance issues caused by the reverse curve alignment. It also does not address the right-of-way conflict at the Thirty Road and Clayson Road intersection or the issue of westbound traffic utilizing Clayson Road as a cut-through. Clayson Road is used as a cut-through due to the sharp westbound right turn angle at the Thirty Road and Young Street intersection, making it difficult for trucks to turn right.

### 4.3.2 Alternative 2: Intersection Improvements & Close Clayson Road at Northern Terminus

This alternative considers Clayson Road closed at the northern terminus with traffic directed to the improved Thirty Road and Young Street intersection (Figure 4.2). The improved intersection would be controlled either by an all-way stop, roundabout, or traffic signal, which will be confirmed in Phase 3 of the EA planning process. This alternative addresses insufficient stopping distance and sightline issues (depending on the type of intersection control selected), and eliminates right-of-way conflict at Thirty Road and Clayson Road intersection. It also addresses westbound traffic utilizing Clayson Road as a cut-through and maintains north-south traffic flow.


Figure 4.2 Alternative 2: Intersection Improvements & Close Clayson Road at Northern Terminus

### 4.3.3 Alternative 3: Improvements at Clayson Road & Young Street Intersection and Close Thirty Road Segment North of Young Street

This alternative involves closing the north segment of Thirty Road and directing traffic to the Thirty Road at Clayson Road intersection (Figure 4.3). This eliminates stopping distance and sightline issues at Thirty Road and Young Street and removes the right-of-way conflict at Thirty Road and Clayson Road. However, this alternative results is expected to cause delays to north-south traffic due to offset intersections, requires upgrades to the Clayson

Road and Young Street intersection, and has some property impacts based on the type of intersection control selected.

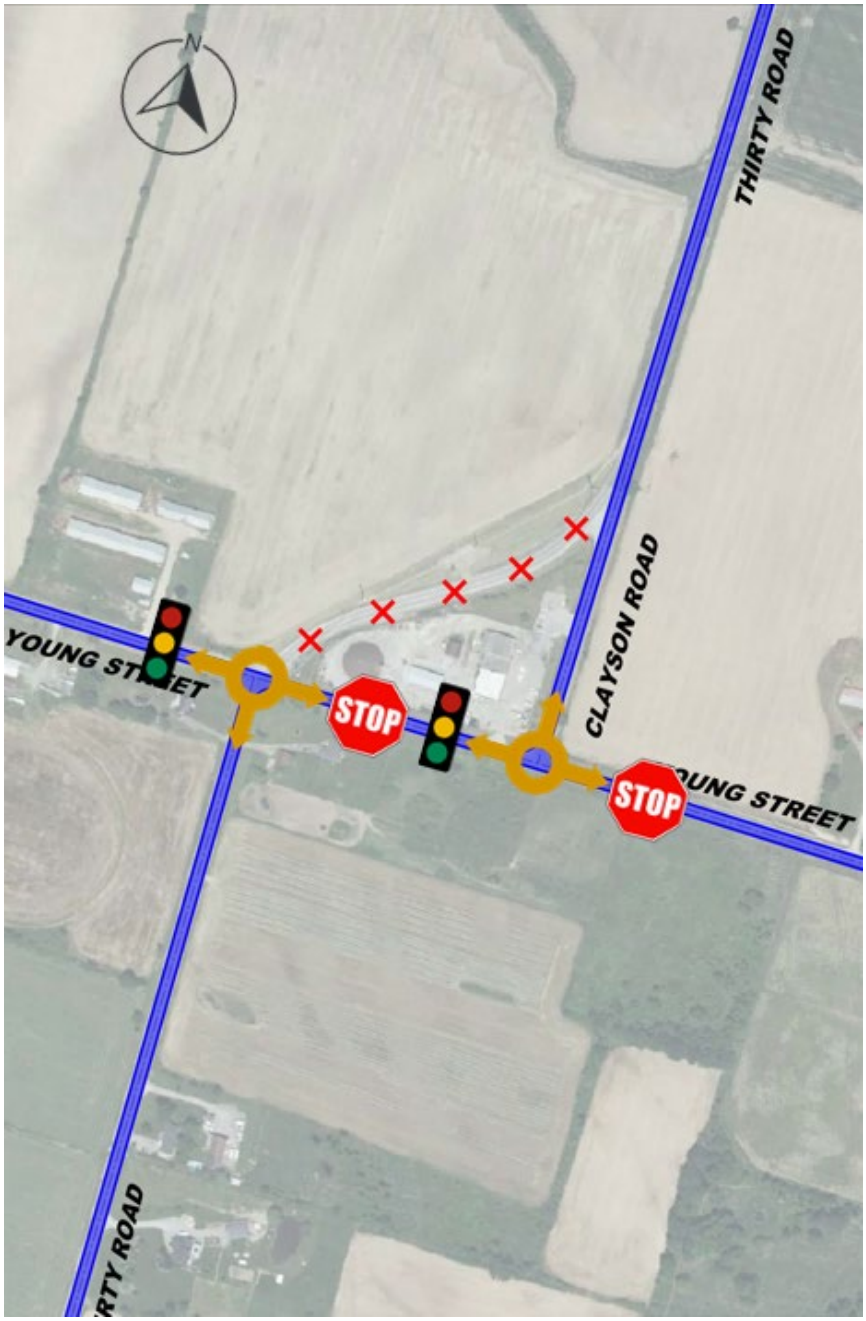


Figure 4.3 Alternative 3: Improvements at Clayson Road & Young Street intersection and Close Thirty Road Segment

### 4.3.4 Alternative 4: Realign Thirty Road North of Young Street

With this alternative, Thirty Road is realigned north of Young Street and Clayson Road is closed at its northern terminus with a cul-de-sac (Figure 4.4). This alternative improves

stopping distance and sightline issues at Young Street and Thirty Road intersection and addresses right-of-way conflicts at Thirty Road and Clayson Road. It also maintains the north-south flow of traffic. However, this alternative impacts the watercourse and Highly Vulnerable Aquifer, impacts property north of Young Street significantly, and has a high cost to implement.

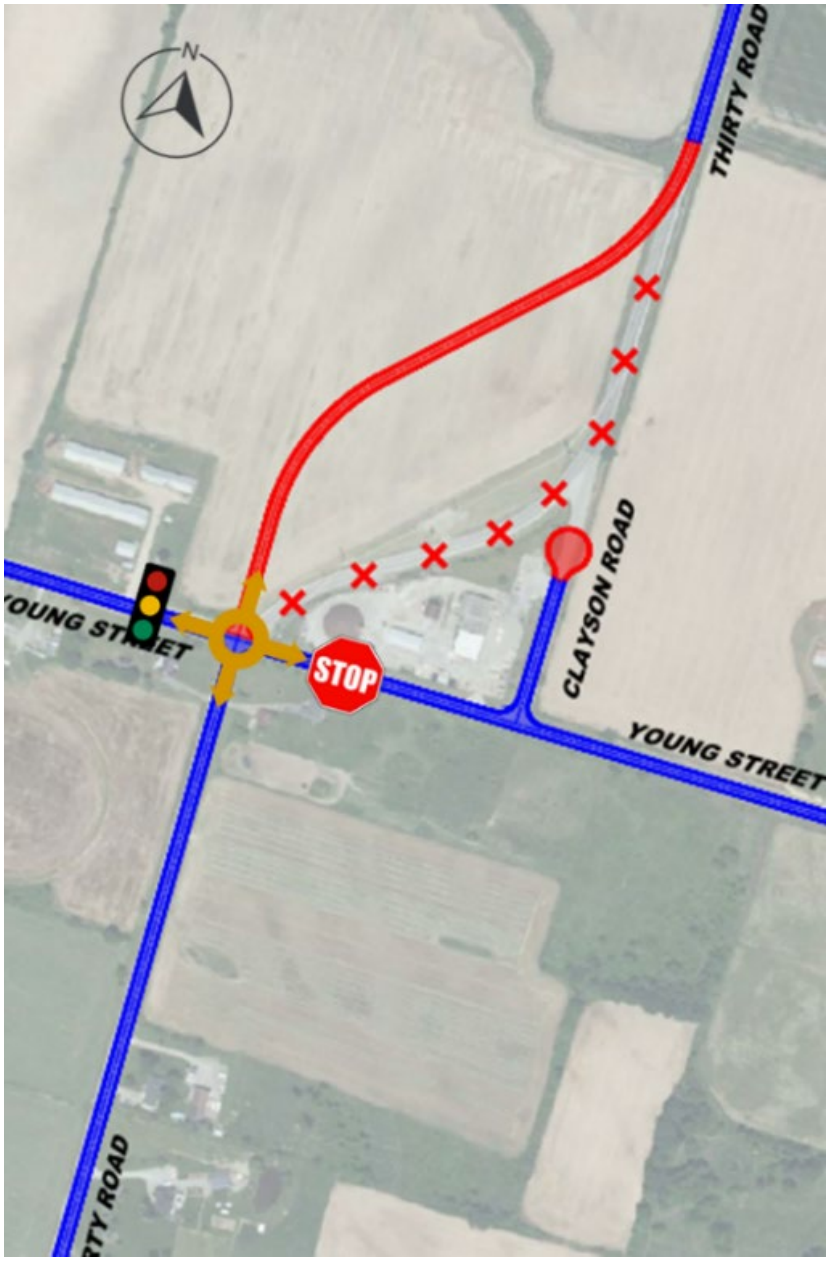


Figure 4.4 Alternative 4: Realign Thirty Road North of Young Street

### 4.3.5 Alternative 5: Extend Clayson Road South of Young Street

In this alternative, Clayson Road is extended south of Young Street and the segment of Thirty Road north of Young Street is closed with a cul-de-sac at the southern terminus (Figure 4.5). This alternative addresses stopping distance and sightline issues at Young Street and Thirty Road, removes right-of-way conflicts at Thirty Road and Clayson Road, and maintains north-south traffic flow. However, this has significant property impacts to the farm south of Young Street and potentially impacts cultural heritage resources. It also has a high implementation cost.

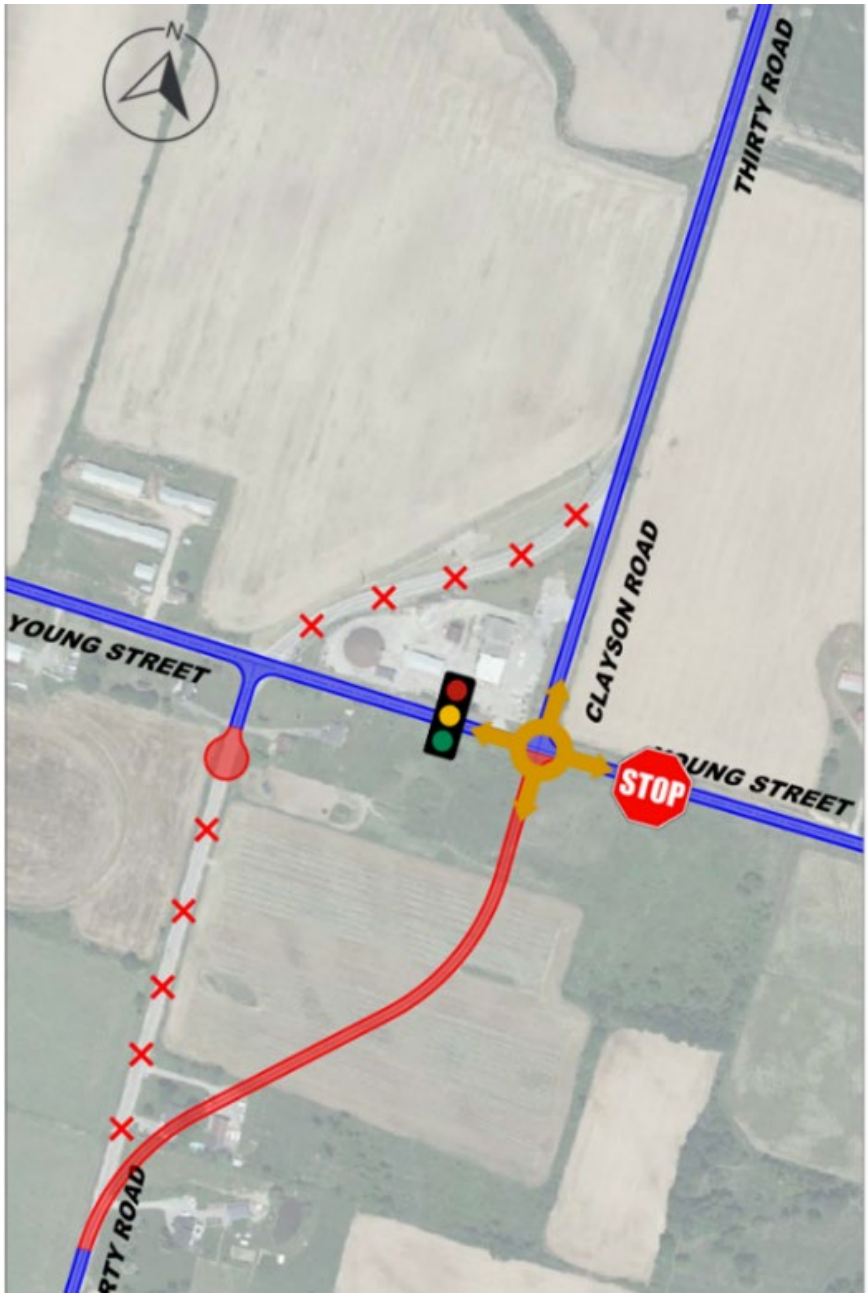

Figure 4.5 Alternative 5: Extend Clayson Road South of Young Street

## 4.4 Evaluation of Alternative Solutions

Table 4.2 Evaluation of Alternative Solutions (Phase 2) summarizes the evaluation of alternative solutions for the traffic operations, safety, and intersection improvements at Thirty Road and Young Street based on criteria presented in Section 4.1 and the evaluation methodology described in Section 4.2 Evaluation Methodology and Ranking System. Refer to Figure 4.1 for the Alternatives Ranking Scale.

Table 4.2 Evaluation of Alternative Solutions (Phase 2)

| EVALUATION CRITERIA | 1. Do Nothing | | 2. Intersection Improvements & Close Clayson Road at Northern Terminus | | 3. Improvements at Clayson Rd & Young St Intersections & Close Thirty Road Segment | | 4. Realign Thirty Road North of Young Street | | 5. Extend Clayson Road South of Young Street | |
|---|---|---|---|---|---|---|---|---|---|---|
| TRAFFIC OPERATIONS & SAFETY | ○ | No safety improvements, with existing sightline and conflict issues not addressed. | ● | Improved traffic flows and sightlines/conflict issues resolved. | ◑ | Sightlines/conflict issues resolved with delays to N-S traffic flows. | ● | Improved traffic flows and sightlines/conflict issues resolved. | ● | Improved traffic flows and sightlines/conflict issues resolved. |
| SOCIO-ECONOMIC ENVIRONMENT | ● | No impacts to property, accesses, agricultural land uses. No traffic calming benefit. | ◕ | Minor property impacts in area of intersections with traffic calming benefit. No impact to agricultural land uses. Access to Regional facility on Clayson Road may be compromised. | ◕ | Localized property impacts in area of intersections. Minor impact to specialty crop area associated with improvement to Clayson Road may require Agricultural Impact Assessment. | ◔ | Significant property impacts including impacts to prime agricultural lands requiring an Agricultural Impact Assessment. | ○ | Significant property impacts including impacts to prime agricultural lands requiring an Agricultural Impact Assessment. |
| NATURAL ENVIRONMENT | ◕ | No impacts to natural environment features or climate change. | ◕ | No impacts to floodplain or watercourse. Minimal potential water quality/quantity, and terrestrial impacts from additional impervious surface mitigated by SWM controls. No impacts to climate change. | ◕ | No impacts to floodplain or watercourse. Minimal potential water quality/quantity, and terrestrial impacts from additional impervious surface mitigated by SWM controls. Minor benefit to local air quality due to reduced idling times. Minor mitigation to climate change effects. | ◑ | Impact to floodplain, regulated watercourse and Highly Vulnerable Aquifer. Impact to terrestrial environment including designated Natural Heritage Lands by Township. Contributes to climate change drivers. | ◑ | No impacts to floodplain or watercourse. Some potential water quality/quantity, and terrestrial impacts from additional impervious surface. No impacts to climate change. |
| ARCHAEOLOGICAL AND CULTURAL BUILT HERITAGE | ● | No impact to archaeological or built heritage resources along the corridor. | ◕ | Potential minor impacts to archaeological resources. Potential for indirect impacts to built heritage resources. | ◕ | Potential minor impacts to archaeological resources. Potential for indirect impacts to built heritage resources. | ◑ | Potential Impact to archaeological resources. Potential for greater indirect impacts to potential built heritage resources in comparison to other alternatives. | ◕ | Potential Impact to archaeological resources. Potential for indirect impacts to potential built heritage resources. |
| COST | ● | No Costs | ◕ | Lowest costs for new intersection controls, potential utility relocations and property aquistion. | ◑ | Costs for new roundabout intersection controls, utility relocations and improvements to portions of Young Street and Clayson Street. | ◔ | Highest cost to construct new roadway platform, new culvert, and property acquisition. Minor costs for utility relocations. | ◔ | High cost to construct new roadway platform, and property acquisition. Minor costs for utility relocations. |
| OVERALL SCORE | 15.0 | | 16.0 | | 13.0 | | 10.0 | | 10.0 | |
| EVALUATION SUMMARY | Not Recommended | | Reccomended to be Carried Forward | | Not Recommended | | Not Recommended | | Not Recommended | |

## 4.5 Preferred Solution

The preferred solution for addressing traffic operation and safety concerns at the Thirty Road and Young Street intersection is Alternative 2: Intersection Improvements and Close Clayson Road at Northern Terminus. This solution will direct all traffic to the improved Thirty Road at Young Steet intersection, with an intersection control that will be determined in Phase 3 of the EA planning process. Clayson Road will maintain local access only for the Regional Public Works Yard and local utilities.

# 5.0 ALTERNATIVE DESIGN CONCEPTS (PHASE 3)

Under Phase 3 of the Class EA, a range of design concepts to implement the preferred solution (as identified in Phase 2) are identified and evaluated based on functionality and impacts to the surrounding environment.

Per the MCEA, the potential impact of each alternative design concept identified was assessed in consideration of the detailed inventory of the environment described in Section 2.0 above, and comparatively evaluated based on these potential impacts to identify the recommended design concept.

The recommended design concepts are then presented to the public (Public Information Centre #2), Indigenous Communities, key interested groups, and government review agencies to solicit input into the selection of the "preferred design". Similar to the process followed during Phase 2 of the study, the EA Act requires that all reasonable design concepts, including the "Do Nothing" alternative, be considered during the decision-making process.

## 5.1 Thirty Road at Young Street Intersection Alternative Design Concepts

### 5.1.1 Alternative 1: Do Nothing

The intersection configuration remains as is with no traffic operations or safety improvements undertaken (aside from the all-way stop implemented as a temporary solution). This alternative is required to be considered under the Municipal Class EA planning process as a baseline for the comparison of alternative design concepts.

### 5.1.2 Alternative 2: 4-Way Stop Controlled Intersection with Realigned Thirty Road

The segment of Thirty Road north of Young Street is realigned and the existing all-way stop control is maintained (Figure 5.1). This alternative addresses sightline and right-of-way conflict issues, however geometric design for the north leg of Thirty Road is not fully addressed. This alternative also requires significant realignment of Thirty Road, fragmenting agricultural lands north of Young Street, resulting in significant property impacts. The realignment of Thirty Road will also impact the floodplain and Highly Vulnerable Aquifer.

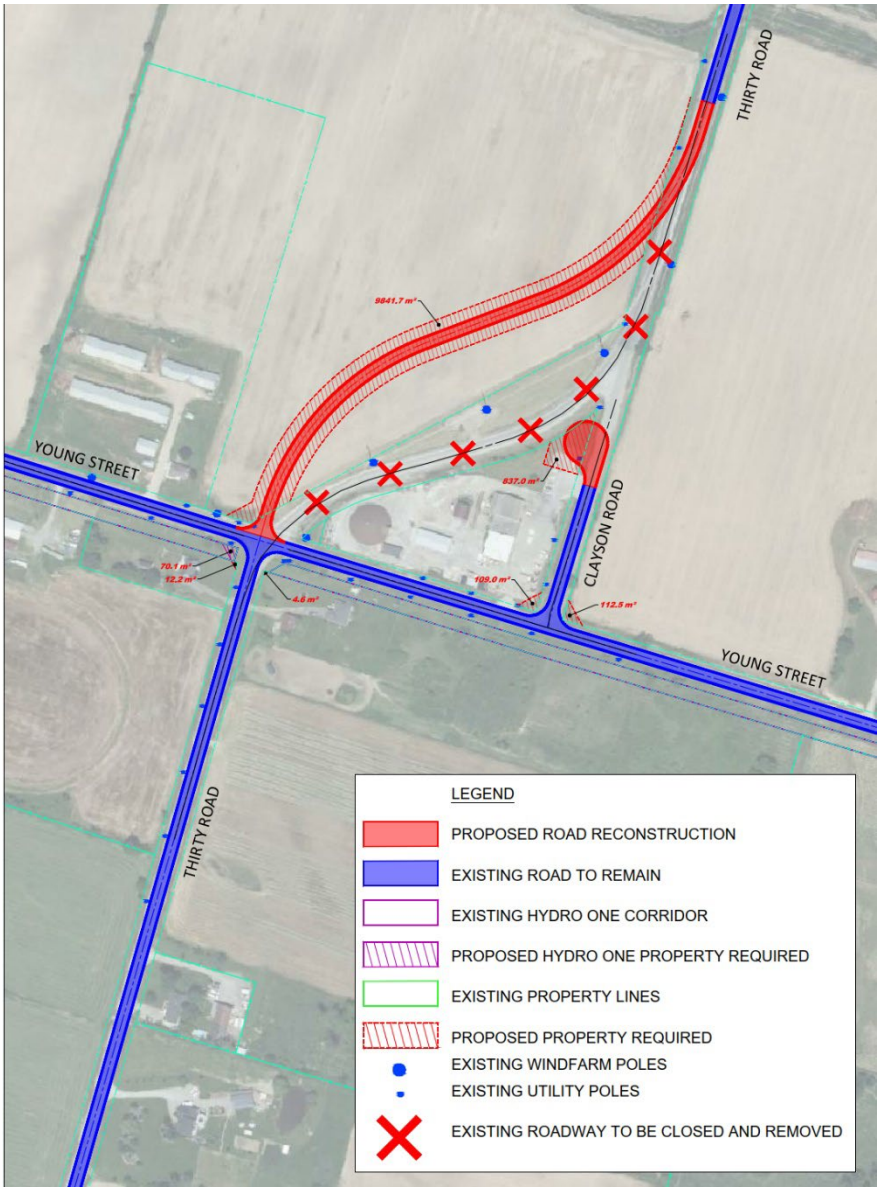


Figure 5.1 Alternative 2: 4-Way Stop Controlled Intersection with Realigned Thirty Road

### 5.1.3 Alternative 3: Signalized Intersection with Realigned Thirty Road

The segment of Thirty Road north of Young Street is realigned to meet geometric guidelines (TAC) and the intersection is controlled by a traffic signal (

Figure 5.2). This alternative addresses sightline, stopping distance, and right-of-way conflict issues, however, it requires significant realignment of Thirty Road fragmenting agricultural lands north of Young street, resulting in significant property impacts. This realignment also impacts the floodplain, requiring a new culvert, and impacts the regulated watercourse and Highly Vulnerable Aquifer.

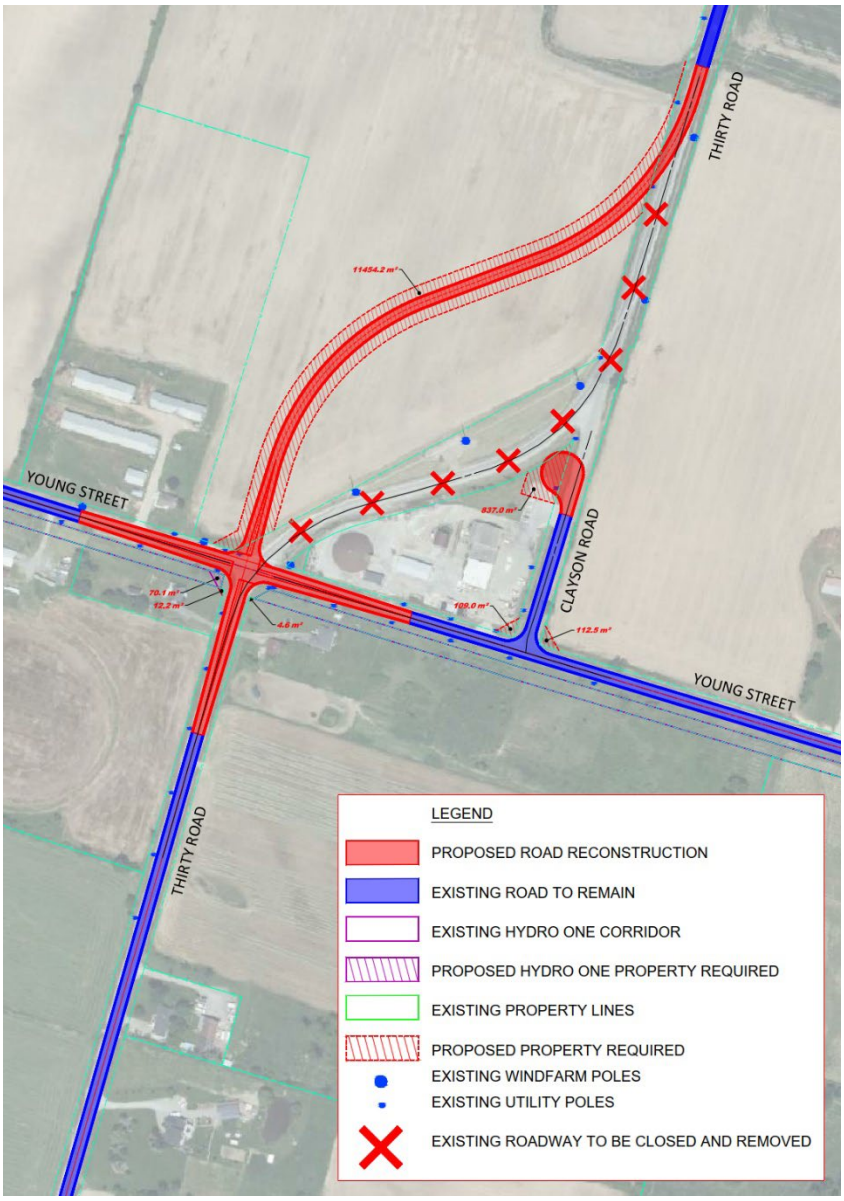


Figure 5.2 Alternative 3: Signalized Intersection with Realigned Thirty Road

### 5.1.4 Alternative 4: Roundabout Intersection with Thirty Road Realigned North of the Windfarm Poles

The intersection of Thirty Road at Young Street is upgraded to a roundabout and the north leg of Thirty Road is realigned to the north of the Niagara Region Wind Farm poles (Figure 5.3). This alternative address sightline, stopping distance, and right-of-way conflict issues as well as geometric guidelines (TAC). This alternative has moderate impacts to agricultural lands to the north and impacts the floodplain, requiring a new culvert, and had indirect impacts to the regulated watercourse and Highly Vulnerable Aquifer. The implementation of a roundabout will also require additional illumination.

This alternative requires the largest amount of property, including Hydro One lands to the south and has the highest construction costs.

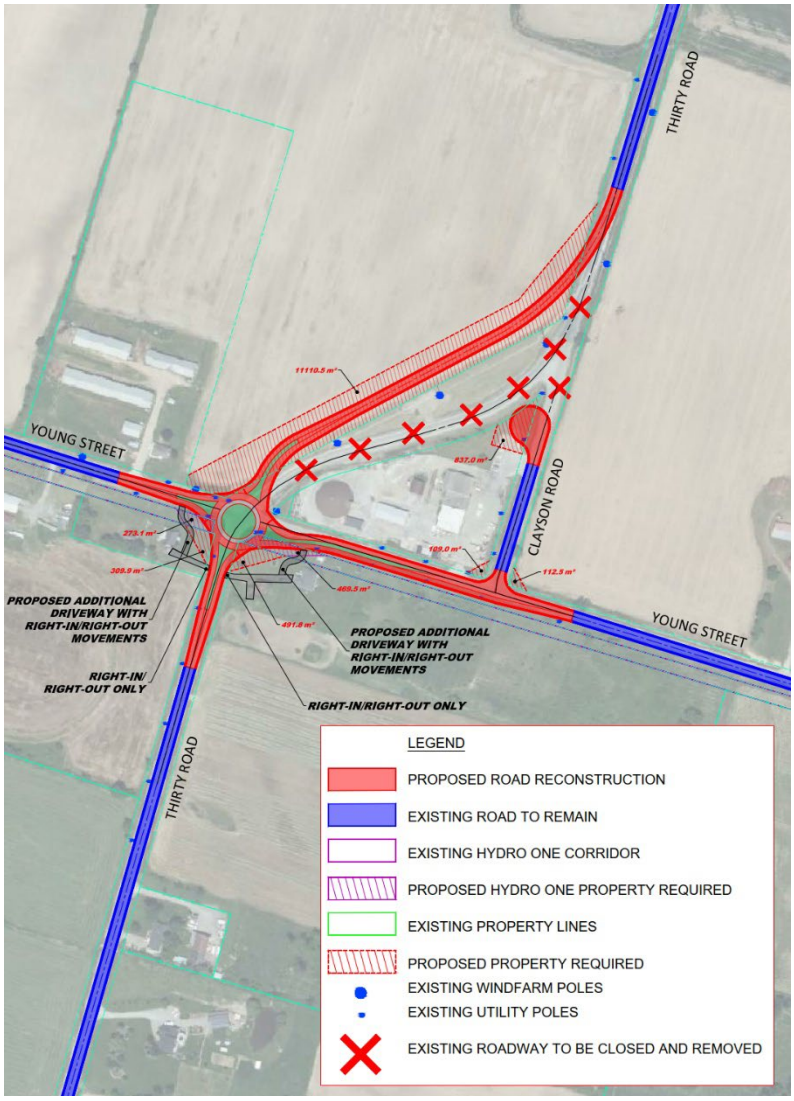


Figure 5.3 Alternative 4: Roundabout Intersection with Thirty Road Realigned North of the Windfarm Poles

### 5.1.5 Alternative 5: Roundabout Intersection with Thirty Road Realigned South of the Windfarm Poles

The intersection of Thirty Road at Young Street is upgraded to a roundabout and the north leg of Thirty Road is realigned to the south of the Niagara Region Wind Farm poles (Figure 5.4). This alternative addresses sightline, stopping distance, right-of-way conflict issues, and geometric guidelines (TAC). This alternative also minimizes impacts to agricultural lands to the north in comparison to other options evaluated and reduces impacts to the

floodplain, regulated watercourse, and Highly Vulnerable Aquifer. The implementation of a roundabout will also require additional illumination.

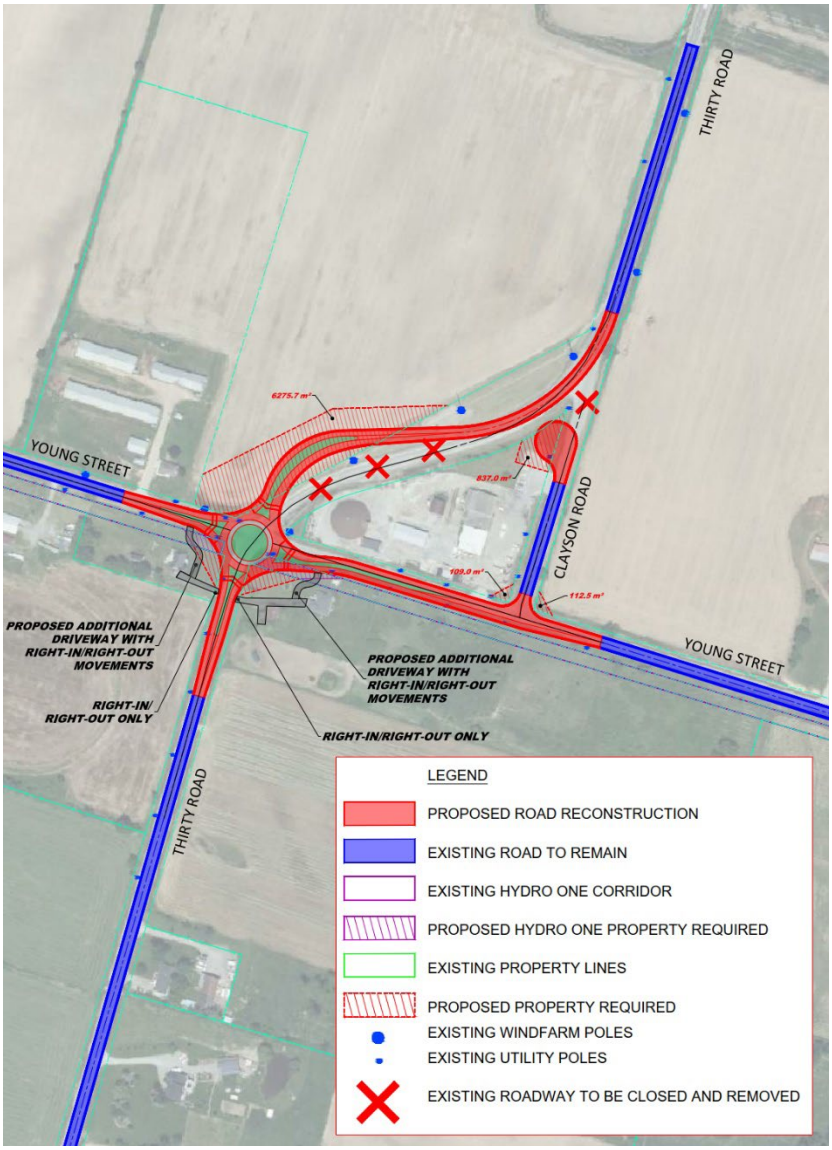


Figure 5.4 Alternative 5: Roundabout Intersection with Thirty Road Realigned South of the Windfarm Poles

### 5.1.6 Alternative 6: Roundabout Intersection with a Right-turn Channel

The intersection of Thirty Road at Young Street is upgraded to a roundabout with a right-turn channel added for westbound traffic turning north onto Young Street (Figure 5.5). This alternative addresses sightline, stopping distance, and right-of-way conflict issues. This configuration generally avoids the agricultural lands to the north, and reduces impacts to the floodplain, regulated watercourse, and Highly Vulnerable Aquifer. However, this configuration does not fully address geometric guidelines (TAC), has the largest intersection

footprint, and introduces a complex driving environment with the introduction of a right-turn channel.

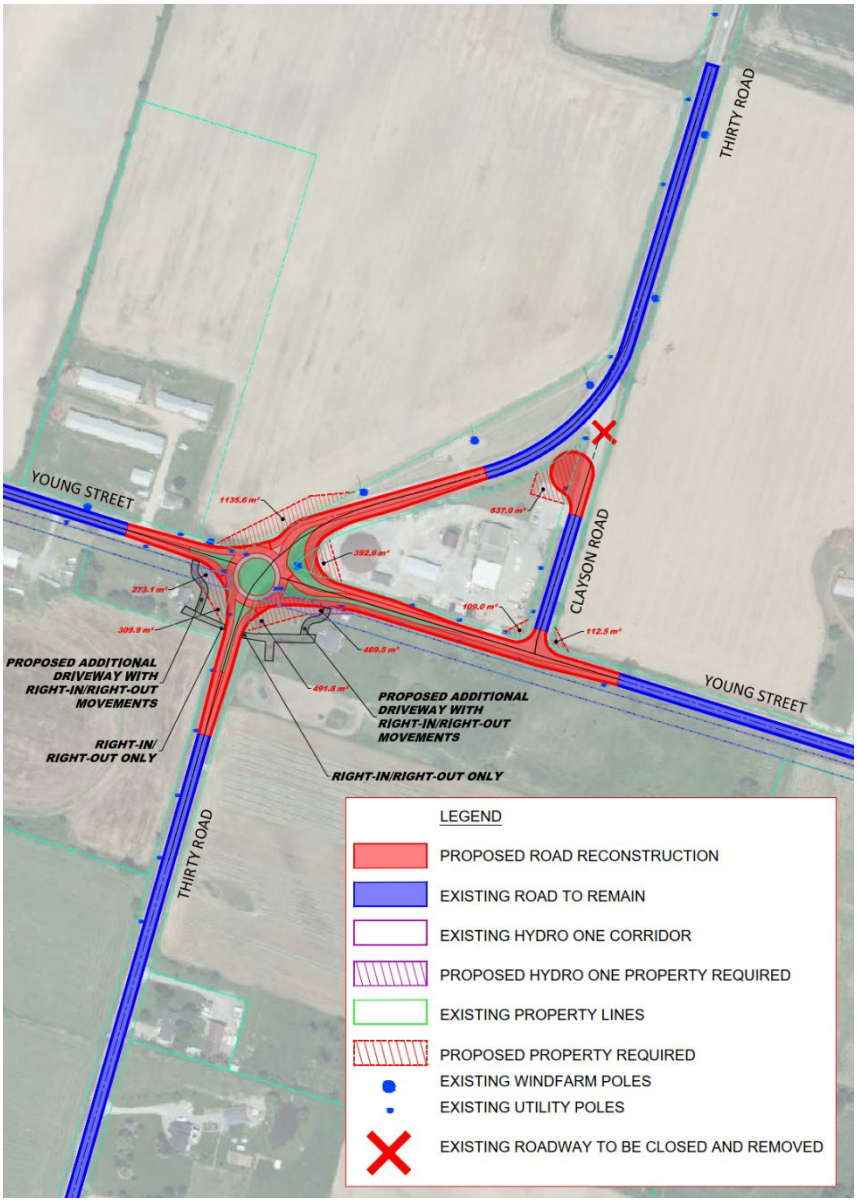


Figure 5.5 Alternative 6: Roundabout Intersection with a Right-turn Channel

## 5.2 Evaluation of Alternative Design Concepts

Table 5.1 summarizes the evaluation of alternative design concepts for implementing the preferred solution of intersection improvements at Thirty Road and Young Street and closing Clayson Road at its northern terminus. The evaluation was completed based on criteria presented in Section 4.1 and the evaluation methodology described in Section 4.2. Refer to Figure 4.1 for the Alternatives Ranking Scale.

Table 5.1 Evaluation of Alternative Design Concepts (Phase 3)

| EVALUATION CRITERIA | 1. Do Nothing | | 2. 4-Way Stop Controlled Intersection with Realigned Thirty Road | | 3. Signalized Intersection with Realigned Thirty Road | | 4. Roundabout Intersection with Thirty Road Realigned North of Windfarm Poles | | 5. Roundabout Intersection with Thirty Road Realigned South of Windfarm Poles | | 6. Roundabout Intersection with a Right-turn Channel | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRAFFIC OPERATIONS & SAFETY | ○ | No safety improvements, with existing sightline and conflict issues not addressed. | ● | Improves traffic operations and safety, sightline and ROW issues fully addressed. | ● | Improves traffic operations and safety, sightline and ROW issues fully addressed. | ● | Improves traffic operations and safety, sightline and ROW issues fully addressed. | ● | Improves traffic operations and safety, sightline and ROW issues fully addressed. | ◑ | Improves traffic operations and safety, sightline and ROW issues fully addressed. Potential delays on north leg for northbound traffic. Introduces a complex driving environment. |
| SOCIO-ECONOMIC ENVIRONMENT | ◕ | No impacts to property, accesses, agricultural land uses. No traffic calming benefit. | ◔ | Reduces property impacts to the south, significantly impacts property to the north, fragmenting agricultural lands. Increased idling time, increasing noise and air quality impacts. | ◔ | Reduces property impacts to the south, significantly impacts property to the north, fragmenting agricultural lands. Increased idling time, increasing noise and air quality impacts. | ◑ | Minor property impacts to the south, moderate property impacts to the north. Reduces idling time, reducing noise and air quality impacts. | ◕ | Minor property impacts to the south, minimizes property impacts to the north. Reduces idling time, reducing noise and air quality impacts. | ◕ | Minor property impacts to the south, generally avoids property impacts to the north. Reduces idling time, reducing noise and air quality impacts. |
| NATURAL ENVIRONMENT | ● | No impacts to natural environment features. No impacts to climate change. | ◑ | Some minor anticipated impacts to roadside vegetation communities from road realignment and grading. Impacts to floodplain, regulated watercourse and HVA cannot be mitigated. Increased idling produces greater greenhouse gas emissions, impacting climate change. | ◑ | Some minor anticipated impacts to roadside vegetation communities from road realignment and grading. Impacts to floodplain, regulated watercourse and HVA cannot be mitigated. Increased idling produces greater greenhouse gas emissions, impacting climate change. | ◕ | Some minor anticipated impacts to roadside vegetation communities from road realignment and grading. Impacts to floodplain. Minor impacs to climate change. | ● | Some minor anticipated impacts to roadside vegetation communities from road realignment and grading. Impacts to floodplain and HVA are reduced, with no impacts to regulated watercourse. No impacts to climate change. | ◕ | Some minor anticipated impacts to roadside vegetation communities from road realignment and grading. Impacts to floodplain, regulated watercourse and HVA are reduced. No impacts to climate change. |
| ARCHAEOLOGICAL AND CULTURAL BUILT HERITAGE | ● | No impact to archaeological or built heritage resources along the corridor. | ◕ | Further Stage 2 Archaeological Assessment required | ◕ | Further Stage 2 Archaeological Assessment required | ◕ | Further Stage 2 Archaeological Assessment required | ◕ | Further Stage 2 Archaeological Assessment required | ◕ | Further Stage 2 Archaeological Assessment required |
| COST | ● | No Costs | ◕ | Lowest construction costs, high property costs, low utility relocation costs. | ◑ | Moderate construction costs, higher property costs, moderate utility relocation costs. | ◔ | Highest construction costs, highest property costs, high utility relocation costs. | ◑ | High construction costs, moderate property costs, moderate utility relocation costs. | ◑ | Moderate construction costs, lowest property costs, highest utility relocation costs. |
| OVERALL SCORE | 15.0 | | 13.0 | | 12.0 | | 13.0 | | 16.0 | | 13.0 | |
| EVALUATION SUMMARY | Not Recommended | | Not Recommended | | Not Recommended | | Not Recommended | | Reccomended to be Carried Forward | | Not Recommended | |

## 5.3 Preferred Design Concept

The preferred design for intersection improvements to Thirty Road at Young Street is Alternative 5: Roundabout Intersection with Thirty Road Realigned South of the Windfarm Poles. Additional details on the preferred design concept are included in Section 7.0.

# 6.0 CONSULTATION / ENGAGEMENT PROCESS

Schedule 'C' EA projects are subject to the full five phase planning process, in accordance with the Municipal Class Environmental Assessment (October 2000, amended in 2007, 2011, 2015, 2023). As such, extensive public and technical agency consultation plays a key role in developing the study recommendations.

Per the MCEA, notification to the public, government agencies, key interested groups, and Indigenous Communities was provided in advance of key consultation opportunities.

## 6.1 Consultation Approach

### 6.1.1 Study Contact List

Various government agencies, authorities, utility companies, stakeholder / interest groups, and Indigenous Communities were informed of the Class EA Study commencement and Public Information Centres (PICs), through direct email. A brief overview of interested groups included in our Study Contact List is provided in Table 6.1 below. A complete list of interested groups who were contacted is provided in Appendix 1-2.

Table 6.1 Study Contact List Overview

| External Study Contact List |
|---|
| **Provincial & Federal Agencies** |
| Ministry of Citizenship and Multiculturalism |
| Ministry of Agriculture, Food, and Rural Affairs |
| Ministry of Environment, Conservation and Parks |
| Ministry of Indigenous Affairs |
| Environment and Climate Change Canada |
| **Township of West Lincoln Departments & Committees** |
| Public Works & Engineering |
| Planning & Development |
| West Lincoln Chamber of Commerce |
| Fire & Emergency Services |
| West Lincoln Heritage Committee |
| Utilities |
| Niagara Region Broadband Network |
| Bell Canada |

| External Study Contact List |
| --- |
| Cogeco Cable |
| Enbridge Gas Distribution Inc. |
| Hydro One |
| Niagara Region Windfarm |
| Niagara Peninsula Energy Inc. |
| Other Interested Groups |
| District School Board of Niagara |
| Niagara Catholic District School Board |
| Niagara Regional Police Service |
| Niagara Region Emergency Services |
| Niagara Peninsula Conservation Authority |
| Indigenous Communities |
| Haudenosaunee Development Institute / Confederacy (HDI) |
| Mississaugas of the Credit First Nation (MCFN) |
| Six Nations of the Grand River (SNGR) |

### 6.1.2 Notification

Residents within and adjacent to the study area received direct mailings of all notices, while members of the general public were invited to participate in the Study through notices published in the newspaper and were notified of the project website for project updates. Residents who asked to be added to the project contact list, were also notified by emails if they provided their contact information. Impacted property owners were contacted via direct mailings, email, and virtual meetings. Table 6.2 below provides a summary of notifications published and distribution methods used throughout the duration of this Study.

Table 6.2 Summary of Study Notification

| Notice | Description | Date Notice Published | Distribution/Publication Methods |
|---|---|---|---|
| Notice of Study Commencement | The notice provided a brief introduction to the Study and the purpose for initiating the Class EA. The notice outlined Study objectives and provided contact details for the public to learn more about the Study. | November 3, 2022 | • Posted to project website<br>• Direct mailing to residents in Study Area<br>• Email to Study Contact List<br>• Email to internal Niagara Region departments<br>• Direct email to Indigenous Communities with cover letter<br>• Newspaper publication (October 27, 2022) |
| Notice of Public Information Centre #1 | The notice introduced the Study and highlighted the purpose of PIC #1. The notice provided a date, time, and location for PIC #1 and contact information should the public have additional comments or concerns. The notice also provided a link to the project webpage, where the link to the virtual PIC was posted and noted that PIC materials will be posted to the webpage following the PIC. | February 21, 2023 | • Posted to project website<br>• Direct mailing to residents in Study Area<br>• Email to Study Contact List<br>• Email to internal Niagara Region departments<br>• Direct email to Indigenous Communities with cover letter<br>• NewsNow tear sheets (Feb. 23 & Mar. 2, 2023)<br>• Published in Grimsby Lincoln News (Feb. 23 & Mar. 2, 2023) |
| Notice of Public Information Centre #2 | The notice introduced the Study and highlighted the purpose of PIC #2. The notice provided a date, time, and location for PIC #2 and contact information should the public have additional comments or concerns. The notice also provided | November 9, 2023 | • Posted to project website<br>• Direct mailing to residents in Study Area<br>• Email to Study Contact List<br>• Email to internal Niagara Region departments |

| Notice | Description | Date Notice Published | Distribution/Publication Methods |
|---|---|---|---|
| | a link to the project webpage, where the link to the virtual PIC was posted and noted that PIC materials will be posted to the webpage following the PIC. | | • Direct email to Indigenous Communities with cover letter<br>• News Now tear sheets (Nov. 9 & Nov. 16, 2023) |
| Notice of Study Completion | The notice included instructions on where the Environmental Study Report (ESR) is available for public review. The notice also provided guidance on how individuals can submit a Section 16 Order request to the Minister of Environment, Conservation and Parks. | November 4, 2024 | • Posted to project website<br>• Direct mailing to residents in Study Area<br>• Email to Study Contact List<br>• Email to internal Niagara Region departments<br>• Direct email to Indigenous Communities with cover letter |

## 6.2 Public Consultation

Key opportunities for residents and general public input to the study included two virtual Public Information Centres (PICs), two online information packages, and online comment forms on the project website as described below.

### 6.2.1 Public Information Centres and Online Information Packages

Two virtual Public Information Centres (PICs) were held at the conclusion of Phase 2 and 3 respectively. The virtual PIC was conducted in a presentation format with opportunity for discussion and questions and answers at the conclusion of the presentation. The virtual PICs invited residents to learn about the study and provide feedback and ask questions during the session.

After each PIC, a Summary report was prepared highlighting the purpose of the PIC, the format in which they took place, materials presented, and comments received. Summary Reports for PIC #1 and PIC #2 are available in Appendix 1-4.

#### 6.2.1.1 PUBLIC INFORMATION CENTRE #1

The first PIC was held on March 9th, 2023, virtually on Microsoft Teams. The PIC included an overview of the Study, including the problem and opportunities to be addressed, existing conditions within the study area, the alternative solutions and evaluation criteria considered, as well as the preliminary recommendations, followed by a question-and-answer period. Members of the project team, which included staff from the Region and R.V. Anderson Associates Limited, were present to discuss the projects and concerns brought forwards by the attendees.

After the virtual PIC was held, presentation materials and the comment form were published on the project's website and made available for several days after so that those unable to attend could participate in the project and provide their comments. The presentation materials and comment form from PIC #1 was posted to the City's project website on March 9, 2023, and were available for comment until March 30, 2023.

A summary of comments received at, and following, the PIC during the comment period is summarized in Table 6.3 below.

Table 6.3 Comments Received from PIC #1 Comment Period

| Group / Medium | Comment Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| PIC #1 Attendee | Residents noted that improvements to the intersection should consider future traffic volumes associated with planned development and potential future road network changes (i.e., potential Smithville bypass, Escarpment crossing etc.). | March 9, 2023 | Project team noted that the traffic analysis completed includes all planned developments and road networks improvements known by the Region at this time.<br>Project team to ensure that improvements to the intersection consider future traffic volumes associated with planned development and future road network (i.e., potential Smithville bypass, Escarpment crossing etc.). |
| PIC #1 Attendee | Residents agreed with the need to provide improvements at the intersection.<br>Some residents noted that they feel the temporary 4-way stop introduced addresses the historical issue.<br>One resident noted concern regarding light pollution associated with signal traffic controls on properties in proximity of the intersection. | March 9, 2023 | Project team noted that due to the s-curve alignment of the north leg, the line sight of sight issues for the eastbound and westbound vehicles and stopping sight distance issue for southbound vehicles are not resolved with the all-way stop control, and that collision risk will increase in the future as traffic volumes increase.<br>Levels of illumination and potential mitigation measures to be considered. |
| PIC #1 Attendee | Residents noted the need to accommodate farm and heavy truck vehicles, with some residents expressing concern that a traditional roundabout intersection may not accommodate these vehicles. | March 9, 2023 | Intersection control to be designed to accommodate for use of farm and heavy truck vehicles. |
| PIC #1 Attendee | Support for presented preferred solution of Alternative 2: Intersection Improvements & Close Clayson Road at Northern Terminus. | March 9, 2023 | Project team to move forward with the evaluation of alternative design concepts to implement Alternative 2 in Phase 3 of the EA. |
| Regional Councillor (Email) | Individual is a Regional Councillor representing West Lincoln. Previously was advocating for a 4-way stop in the short-term, which they were previously told is not possible. When the 4-way stop was installed in November 2022, residents in the area were happy that the intersection is now safer. Councillor believes the safety concerns have been addressed by this 4-way stop. | March 14, 2023 | Any improvements recommended through the EA will be subject to future budgets as they are not incorporated within the Region's 10-year capital forecast. Accordingly, Region anticipates, and subject to the full results of the EA, that the all-way stop will remain in place for the near and medium term. The Region will continue to monitor operations and then move forward with the recommendations of the EA if the current all-way stop be shown not to have addressed or reduced the frequency of collisions. |
| Resident (Online Form) | Resident is not in favour of the current all-way stop configuration. Resident suggested that if the Phase 3 recommended design concept includes a traffic signal at Thirty Rd. and Young St., then a sensor should be implemented so that traffic is not impeded if there are no vehicles travelling on the other corridor. This would maintain a flow of traffic. Resident noted that a similar sensor is installed on the corner of 12 Grimsby Rs and Highway 20.<br>Resident also noted that if a roundabout intersection is implemented, then it should be able to accommodate large trucks. | March 10, 2023 | The Project Team considered implementing a traffic signal, however, to maintain flow of traffic, the roundabout is the preferred option from a traffic operations and safety standpoint. |
| Resident (Online Form) | Resident commented that the all-way stop implemented has alleviated safety concerns at the intersection. The resident noted that previously, approaching the intersection from the east was problematic due to the line of sight to the north, but since the all-way stop, that line of sight concern is eliminated. Resident noted that is has also calmed traffic coming into Smithville since all vehicles must stop at the intersection. Resident has observed an improvement in vehicle speeds approaching the urban area. | March 6, 2023 | The Niagara Region will continue to monitor this temporary solution and will implement the preferred roundabout intersection when the Council's budget allows for it. |
| Resident (Email) | This resident uses the Thirty Rd. at Young St. intersection constantly and noted that one of the main problems in the area are the posted speed limits. The resident suggested to lower speeds from Mud St. to the town to 50 km/h or 60 km/h on Region Road 14 (Station St.). Similarly speeds on Young St. should be reduced from 80 km/h to 50 km/h from Industrial Park Rd to South Grimsby Rd. 5. The resident also | March 10, 2023 | To ensure safety of all road users for the preferred design concept, the posted speed limit on Thirty Road will be maintained at 60km/h and on Young Street, it will be reduced to 60km/h. |

| Group / Medium | Comment Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| | suggested to realign Clayson Rd to intersect Thirty Rd at 90 degrees and make it a one-way northbound to address the sightline issues at that intersection. | | Upon further consideration, the Region decided not to move forward with implementing the interim configuration. The existing intersection configuration will remain in place until the roundabout intersection can be implemented. |
| Resident (Online Form) | Industrial Park opening has made traffic in the study area worse as people use Clayson Rd to get to Industrial Park Rd from Thirty Rd with people rarely slowing down or yielding to traffic. Resident noted the all-way stop installed is an improvement but agrees with the Phase 2 preferred solution – Alternative #2, due to its reduced impacts and it being the most logical option.<br>Resident noted that the all-way stop should have a flashing light. Turning clearance should also be improved at the intersection to accommodate large trucks and farm vehicles. | March 10, 2023 | The Project Team will take these comments into consideration during detailed design of the roundabout intersection to ensure accommodation of large trucks and farm vehicles. |
| Resident (Online Form) | Turning north onto Thirty Rd from westbound Young St or turning east onto Young St from southbound approach is difficult due to the angle of the main intersection. The biggest problem at the Thirty Rd and Clayson Rd intersection is the angle at which the roads intersect as it causes visibility issues looking south over the shoulder when travelling north on Clayson Rd and merging onto Thirty Rd.<br>Resident doesn't believe that enough work has been done to properly identify current and future traffic use and habits in this area. Traffic flow at this intersection should also include the future possibility of the eventual construction of an escarpment crossing and how it will feed into or connect with local roads. The current 4 way stop could be made permanent at this time and a relatively inexpensive realignment of the intersection of Clayson Road at Thirty Road (initially proposed approx. 20 years ago to handle increased traffic from the Industrial Park Road extension to Young Street) to improve site lines would be prudent at this time and more extensive and well planned improvements could be made in the coming years once the Niagara Region finalizes plans for an escarpment crossing and Smithville bypass route. | March 29, 2023 | The Region will monitor traffic and safety operations in the Study Area for the next few years until the Council's budget allows for the roundabout intersection to be implemented. |

#### 6.2.1.2 PUBLIC INFORMATION CENTRE #2

The second PIC was held on November 22nd, 2023, virtually on Microsoft Teams. a refresher on existing conditions in the Study Area, ongoing key studies being undertaken, and present and obtain comments on the alternative and recommended designs for the intersection, followed by a question-and-answer period. Members of the project team, which included staff from the Region and R.V. Anderson Associates Limited, were present to discuss the project and concerns brought forward by the attendees.

After the virtual PIC was held, presentation materials and the comment form were published on the project's website and made available for several days after so that those unable to attend could participate in the project and provide their comments. The presentation materials and comment form from PIC #2 was posted to the City's project website on November 22, 2023, and were made available for comment until January 3, 2024. A summary of comments received at, and following, the PIC during the comment period is summarized in Table 6.4.

An interim configuration was originally included as part of the PIC #2 presentation materials, however, upon further discussion with the Region and investigations into the feasibility of implementing an interim configuration, the Region decided to remove the interim configuration alternative.

Table 6.4 Comments Received from PIC #2 Comment Period

| Group / Medium | Comment Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| PIC #2 Attendee | A resident noted that the legend and mark ups on the renderings for the roundabout alternatives were blurry and not legible when zoomed in. | November 22, 2023 | The project team revised the PIC #2 display boards after the PIC #2 meeting with high resolution and larger font images to post to the project webpage. |
| PIC #2 Attendee | A resident who farms in the area asked if the turning movements of farm equipment was considered when developing the alternative designs. The resident indicated that roundabouts are tricky to maneuver for large farm vehicles and prefers the current all-way stop. They also offered to provide specifications on farm equipment used in the area to help the project team assess if the turning movements can be made by the equipment in the proposed designs.<br>Another resident concurred that the roundabout would restrict farm equipment movement and prefers the north leg of thirty road alignment from Alternative 5 but with the current all-way stop control intersection.<br>It was noted that there are currently two roundabouts in Smithville that are too narrow and tight for farm equipment and trucks.<br>Large vehicles travelling southbound on Thirty Road are not able to turn left to travel east on Young Street without crossing into opposing lanes of traffic. | November 22, 2023 | Specifications for a Combine Harvester vehicle and a Tractor with Trailer vehicle will be used to analyze the turning movements to ensure they can be made by large equipment. If not, the design alternatives may be modified to accommodate large vehicles. |
| PIC #2 Attendee | A resident asked if consideration was given to Young Street potentially being the east/west Smithville Bypass that is planned for Smithville in the future. | November 22, 2023 | The project team advised that based on previous discussion with staff involved in the study, Young Street is unlikely to be the site of the east/west Smithville Bypass. |
| PIC #2 Attendee | A resident suggested that the interim solution of making Clayson Road one-way (northbound only) north of the Regional Yard driveway should remain as two-way traffic as southbound tractor trailers will not be able to make a left turn from Thirty Road onto Young Street.<br>Another resident noted that because of the southbound closure of Clayson Road in the interim, all truck and farm equipment traffic travelling south on Thirty Road will be forced to travel all the way to Spring Creek Road before being able to head east. This will increase traffic on Thirty Road instead of it being diverted to the industrial park via Young Street.<br>A merging lane from Clayson Road onto Thirty Road northbound should be considered.<br>The turning of vehicles from southbound Thirty Road onto eastbound Young Street would be less than ideal and almost impossible for large trucks, tractor trailers to navigate while trying to access the Industrial Park as well as the 2 quarries on Young Street. | November 22, 2023 | Upon further consideration, the Region decided not to move forward with implementing the interim configuration. The existing intersection configuration will remain in place until the roundabout intersection can be implemented.<br>A merging lane from Clayson Rd onto Thirty Rd northbound was considered but is not recommended due to property and floodplain impacts. |
| PIC #2 Attendee | It was asked if consideration was given to the Escarpment Route following Industrial Park Rd going south and the possible extension of Industrial Park Rd to the Regional Road 20 roundabout in west Smithville. | November 22, 2023 | The Project Team completed a Traffic Impact Study which took into consideration a new connector road linking Industrial Park Rd to Regional Road 20 and a 1km extension from the new connector road to Spring Creek Rd. |
| PIC #2 Attendee | A resident suggested that future east/west traffic volumes will increase in the future because the industrial park is expanding, with majority of traffic using Young Street to travel to the park. There are coring operations further south of Young Street that might be moving to the Spring Creek Pit, closer to Young Street, therefore increasing traffic volumes. | November 22, 2023 | The Project Team will review this information and take it into consideration prior to finalizing the preferred design concept. |
| PIC #2 Attendee | A resident asked if the project team considered implementing a roundabout at the Clayson Road and Young Street intersection with Thirty Road continuing south to connect. | November 22, 2023 | The Project Team considered several options prior to developing this short list of alternative design concepts. However, the impacts of those design concepts were greater and were therefore ruled out. |
| PIC #2 Attendee | It was asked why the roundabout is preferred versus the all-way stop. | November 22, 2023 | The Project Team noted that roundabouts provide better flow of traffic, uniform speed, good turning movements, |

| Group / Medium | Comment Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| | There was support from a few residents regarding the implementation of the all-way stop. They noted that it was working well. | | and increase efficiency when travelling, therefore, as a long-term solution, a roundabout is preferred. |
| PIC #2 Attendee | A resident asked what the expected timeline is between the interim solution and implementing the permanent recommended solution.<br>Another respondent commented that this project should be shelved until the Smithville by-pass and the Escarpment Crossing are further defined. These two routes are more important and may have some impact on the Thirty Road at Young Street intersection, which may need to be revised again to accommodate these two major routes. | November 22, 2023 | Upon further consideration, the Region decided not to move forward with implementing the interim configuration. The existing intersection configuration will remain in place until the roundabout intersection can be implemented. |
| PIC #2 Attendee | A resident asked if the relocation of the Regional Yard was ever considered. | November 22, 2023 | The Project Team noted that there are no plans to move the Regional Yard currently. |
| PIC #2 Attendee | If a roundabout is implemented, it should be much larger than other roundabouts in the area to ensure large trucks and farm vehicles can use it safely.<br>A respondent is worried that South Grimsby Road 3 will become an alternate “truck route” given its proximity to Industrial Park Road and if the Thirty Road and Young Street intersection becomes too difficult for trucks to navigate. The respondent suggests implementing no truck route signs on South Grimsby Road 3 before the problem gets worse.<br>A respondent does not support the roundabout configuration because the 4-way stop is working effectively, the substantial construction and costs are unwarranted, the property impacts for residents is significant, and there may be an increase in difficulty of movement of large agricultural equipment. They also feel that the construction of a roundabout is premature at this location as there has not been a transportation plan completed that involves how traffic patterns will be affected in this area once the proposed Niagara Escarpment Crossing combined with the Smithville Bypass route are built.<br>A respondent is in support of the roundabout configuration, noting that it is the most cost-effective way to maintain a flow of traffic, while lowering climate change impacts, and being proven as the preferred alternative to traffic signals. | November 22, 2023 | The roundabout configuration will be designed to accommodate large trucks and farm vehicles.<br>The Project Team will take into consideration the concerns for South Grimsby Road 3.<br>Niagara Region will monitor traffic operations and safety at the all-way stop intersection for the foreseeable future. The roundabout configuration will be designed to accommodate large farming vehicles. Impacts to traffic patterns from a future Niagara Crossing and Smithville bypass route do not alleviate the need to address the current operational and safety issues at the intersection. The property impacts associated with the recommended design concept are reduced compared to other alternatives. |
| PIC #2 Attendee | A respondent expressed concern that weaving the road in and out of the wind farm poles is dangerous to all traffic and may hinder truck traffic from using Thirty Road even more.<br>The respondent suggests that Thirty Road should be realigned to the north of the wind farm poles, as shown in Alternative 4 in the PIC #2 display panels. | November 22, 2023 | The Project Team and ensured that large trucks are able to safely maneuver the realigned Thirty Road at the posted speeds.<br>Alternative #4 was considered, but due to property impacts, it was not the recommended solution. |
| PIC #2 Attendee | Traffic wishing to head north on Thirty Road from a westbound direction has always used Clayson Road as the main intersection has never allowed for a turn in that direction to be made safely.<br>Traffic on Clayson Road has increased greatly since the Township of West Lincoln improved Industrial Park Road through to Young Street. Improvements to traffic flow in this area were proposed to coincide with the upgrade of Industrial Park Road but were never acted upon. | November 22, 2023 | The proposed intersection configuration and realignment of the north leg of Thirty Road will allow for safe northbound manoeuvres onto Thirty Road from Young Street. |
| PIC #2 Attendee | Safety of this intersection can be improved in two ways:<br>1: For traffic heading southbound onto Clayson Road from Thirty Road, sightlines to see northbound traffic on Thirty Road can be improved by removing or leveling the piles of dirt that are currently being created by Niagara Region Public Works on the land opposite the Public Works Yard.<br>2: It is difficult to look backwards for approaching northbound traffic on Thirty Road when trying to enter from Clayson Road. This is made most difficult when stopped at the current stop sign. If the stop sign was moved a little further back from the intersection, it would be easier to see this approaching traffic. It is preferred that these changes are made first and evaluating the intersection safety before realigning the intersection. If the intersection of Clayson Road and Thirty Road is eventually realigned, it must continue to support 2-way traffic at that intersection. | November 22, 2023 | The Project Team will take this comment into consideration when finalizing the preferred design concept. |

| Group / Medium | Comment Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| Resident (Email) | Resident believes the existing 4-way stop sign is working well and most issues with this intersection have been resolved. A traffic circle will limit truck and farm equipment access which is going to impact the area beyond the study area. Resident noted that since the stop sign went up, they are seeing more truck traffic on South Grimsby Road 3. A roundabout will only make it worse because trucks will want to avoid it. Making Clayson Rd one way north is a good idea, but a merge lane onto Thirty Rd from Clayson Rd should be considered.<br><br>Resident is against the traffic circle at this intersection. Resident has heard nothing good about the ones installed on Regional Road 20 and the witness marks on the road at these locations indicate that Trucks have a real problem. If a roundabout is implemented at this intersection, it should be made larger to accommodate trucks.<br><br>The argument of maintaining traffic flow is also weak given all the recent efforts by West Lincoln to slow traffic entering the town which now theoretically starts at this intersection. The stop signs would perform that function. Regarding the relocation of Thirty Rd, the resident thinks the proposed alignment to weave in and out of the windfarm poles is dangerous to all traffic and will undoubtedly hinder truck traffic even more. Resident suggests aligning Thirty Rd to the north side of the poles before they start, like Alternative 4. Regarding concerns about the floodplain, resident believes there would be little to no impact on the current situation if the Region stays with the interim plan shown.<br><br>Resident is also not keen on spending upwards of $10.5 million to correct a problem that appears to already have been fixed. Resident suggests making minor changes and leave it as is. Since there is no budget or approval for this project, the project should be shelved until the Smithville By-Pass and the Escapement Crossing has been defined. These other routes are more important and bound to have some type of impact on Thirty Rd & Young St, which may have to be reworked to accommodate. It is not logical to consider these projects independently since they should all complement each other. | December 13, 2023 | The Project Team has designed a roundabout that is large enough for large trucks and farm vehicles to maneuver, including adding truck aprons to the centre of the roundabout.<br><br>A merge lane from northbound Clayson Rd onto Thirty Rd was considered, but it would have greater impacts to properties and the floodplain, therefore the Clayson Rd and Thirty Rd intersection will be realigned to be more perpendicular, so northbound traffic on Clayson making a right turn to continue north on Thirty Rd have better sightlines.<br><br>The Project Team considered Alternative 4, to realign Thirty Rd north of the windfarm poles, however, the impacts to surrounding agricultural lands was greater than the recommended realignment in Alternative 5. The Project Team has analyzed vehicle movements for the preferred realignment of Thirty Rd and confirmed that large trucks are able to navigate Thirty Rd safely.<br><br>Upon further consideration, the Region decided not to move forward with implementing the interim configuration. The existing intersection configuration will remain in place until the roundabout intersection can be implemented. |
| Resident (Email) | Resident agrees that the implementation of a "temporary" four way stop at this intersection has improved safety greatly.<br><br>The turning of vehicles from southbound Thirty Road onto eastbound Young Street would be less than ideal and almost impossible for large trucks, tractor trailers to navigate while trying to access the Industrial Park as well as the 2 quarries on Young Street.<br><br>The resident feels that safety could be improved slightly in 2 ways at the intersection:<br><br>1) For traffic heading southbound onto Clayson Road from Thirty Road, sightlines to see traffic headed northbound on Thirty Road would be improved by the removal or leveling of the piles of dirt that are currently being created by Niagara Region Public Works on the land opposite the Public Works Yard.<br><br>2) It is also difficult to look backwards for approaching northbound traffic on Thirty Road when trying to enter from Clayson Road. If the stop sign was moved a little further back from the intersection, it would be much easier to see this approaching traffic. | December 13, 2023 | The Project Team reviewed and considered the resident's comments and have documented them as part of this report. |

| Group / Medium | Comment Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| | Resident supports the realignment of Thirty Road as proposed in Option 5 and the closing of Clayson Road but does not support the construction of a roundabout and feels that the continued use of a 4-way stop is sufficient. Resident feels that the construction of an elaborate intersection is not warranted due to the increase in cost, encroachment on the residential properties and the difficulty of movement of large agricultural equipment.<br><br>Resident feels that the construction of a roundabout at this location is premature as there has not been a transportation plan completed that involves how traffic patterns will be affected in this area once a proposed Niagara Escarpment Crossing combined with a Smithville Bypass route are studied, evaluated and eventually built. Only after these future projects are closer to reality and the Town of Smithville along with the Industrial Park expansion are realized, can a truly educated and well thought out major improvement to this intersection be considered. | | |
| Resident (Form) | Resident is supportive of the option where Clayson Road becoming a cul-de-sac. From reviewing the design this seems to be the most cost competitive solution that has the least impact on the flow of traffic.<br><br>Resident agrees with the roundabout solution for the Thirty Road & Young Street intersection, as this is the best solution for driver and pedestrian safety. Additional benefits to a roundabout solution are the lower environmental impacts and long-term lower maintenance cost compared to a traffic signal intersection. | December 6, 2023 | The Project Team reviewed and considered the resident's comments and have documented them as part of this report. |

### 6.2.2 Project Website and Additional Comments

At the project commencement stage, a webpage was developed for this project on the Niagara Region's website. Information related to the Class EA study was posted on this webpage https://www.niagararegion.ca/projects/regional-road-14/default.aspx throughout the study, including study notices, materials related to Public Information Centres, and study reports.

In addition to the formal consultation described above, contact information of the Project Manager, including email, telephone and mailing address were available to the public on the Region's project website, and was included in all public notices distributed. This provided an ongoing opportunity for members of the public to submit their questions, concerns, and/or comments regarding the study to the project team at any time during the study. All correspondence received outside of the PIC and associated comment periods is summarized in Table 6.5 below and available in Appendix 1-8.

Table 6.5 Comments Received from Residents & Public

| Group / Medium | Comment Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| Resident (Email) | Resident represents landowners in Smithville who have been heavily involved in financing the urban boundary expansion of Smithville that has been approved by the province and is in the process of being approved by the Region and the Township. This EA study concerns the people this individual represents. One of the undertakings in the Smithville UBE is determining a bypass for the Town. Young St as a possible route for that bypass has regularly come up and has been endorsed by various politicians. The resident hopes the Region is not contemplating doing this EA outside of an EA that would determine the location of that bypass. This may very well affect this effort and make it redundant to do this at this time. | February 27, 2023 | The Project Team clarified to this resident that this EA study is looking at geometric improvements to the intersection to address road safety only. The Region will still be undertaking the Smithville By-Pass EA to evaluate potential by-pass corridors. |

### 6.2.3 Consultation with Impacted Property Owners

To ensure property owners are aware of the impacts anticipated with the implementation of the preferred design concept, letters were mailed directly to them including drawings of the preferred design concept. The Project Team also requested to meet with them to provide them the opportunity to voice their concerns and have their questions answered.

Three owners responded to the letter and met with the Project Team. A summary of property owners contacted is provided in Table 6.6. Copies of the letters sent, correspondence with each property owner, and minutes of meetings held are provided in Appendix 1-9.

Table 6.6 Consultation with Impacted Property Owners

| PROPERTY ADDRESS & LOCATION (RELATIVE TO THIRTY @ YOUNG INTERSECTION) | Date of Correspondence | Date Of Meeting | Meeting Summary |
|---|---|---|---|
| **3093 Thirty Road (Southeast corner)** | October 10, 2023 (initial Letter)<br>December 13, 2023 (1st Follow-Up Letter)<br>January 22, 2024 (2nd Follow-Up Letter) | March 5, 2024 | • Project Team notified owners that some land will be required for the preferred design concept (as identified in Section 9.1.1. of this ESR).<br>• The Project Team proposed implementing a second driveway to provide full access to their property. Property owners would prefer to shift the second driveway westward, if possible. This will be confirmed during detailed design.<br>• There may be some impacts to the owners' fence that is on the Hydro One corridor. The fence will be replaced.<br>• Owners would like to have any impacted trees replaced to maintain their privacy. Location of the new trees will be determined during detailed design in consultation with the owners. |
| **3094 Thirty Road (Southwest Corner)** | October 10, 2023<br>December 13, 2023 | January 11, 2024 | -<br>• Project Team notified owners that some land will be required for the preferred design concept (as identified in Section 9.1.1. of this ESR).<br>• Property owners would like to have their second driveway off Young Street, directly across from the driveway to the property north of Young Street (chicken farm). The driveway will lead up to the barn on their property. The Project Team noted that this is a preferred solution from a design perspective. |
| **6285 Young Street (Northeast Corner of Clayson Rd and Young St)** | December 13, 2023<br>January 22, 2024 | February 23, 2024 | • Project Team notified owners that some land will be required for the preferred design concept (as identified in Section 9.1.1. of this ESR), specifically for a daylight triangle.<br>• There will be no real changes to the land acquired by the Region.<br>• Property owners provided specifications for oversized farm equipment they use in the area that would need to be accommodated in the roundabout intersection. |
| **6419 Young Street (Northwest Corner)** | October 10, 2023<br>December 13, 2023<br>January 22, 2024 | N/A | • No response received from property owner, therefore, no meeting was held. |

## 6.3 Key Interested Groups, Interest Groups & Technical Agencies

### 6.3.1 Technical Agency Committee (TAC)

As part of the public consultation process, two Technical Agency Committee (TAC) meetings were held to present project progress and collect input from various key interested groups. Representatives from the following technical agencies were invited to the TAC meetings:

- Niagara Region
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Natural Resources and Forestry
- Ministry of Environment, Conservation and Parks
- Ministry of Citizenship and Multiculturalism
- Township of West Lincoln
- Hydro One
- Niagara Peninsula Conservation Authority

A summary of Technical Agency Committee meetings is provided below. Copies of the invitation, presentation materials, and meeting minutes for both TAC meetings are provided in Appendix 1-3.

#### 6.3.1.1 TECHNICAL AGENCY COMMITTEE (TAC) MEETING #1

The first TAC meeting was held on February 22, 2023, to receive input from key technical agencies on the existing conditions, key constraints within the Study Area, alternative solutions, evaluation criteria, and preliminary recommended solution. Key topics of discussion included the design speed specifications, possible intersection control options, and temporary improvements until reconstruction of the whole intersection is approved within the Regional budget.

#### 6.3.1.2 TECHNICAL AGENCY COMMITTEE (TAC) MEETING #2

The second TAC meeting was held on November 1, 2023, to receive input on the alternative design concepts and recommended design. Key topics of discussion included driveway access for properties south of the roundabout intersection, closure of Clayson Road, environmental impacts for each alternative, and the introduction of a complex driving environment in Alternative 6.

### 6.3.2 Correspondence from Technical Agencies

During the course of the EA study, correspondence was received from various technical agencies, as outlined in Table 6.7 and included in Appendix 1-5. Meetings were also held with a few key technical agencies and interested groups. Minutes for these meetings can be found in Appendix 1-6.

Table 6.7 Comments Received from Technical Agencies

| Agency / Group | Comments Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| Ministry of Environment, Conservation and Parks (MECP) | In response to the Notice of Commencement, the MECP responded with the following comments:<br>• MECP delegated the procedural aspects of rights-based Indigenous consultation to the proponent and provided a list of Indigenous communities to consult with.<br>• A draft copy of the ESR should be sent directly to Joan Del Villar C prior to the filing of the final report, allowing 30 days for the ministry's technical reviewers to provide comments.<br>• MECP's Areas of Interest in Relation to the study: Planning and Policy; Source Water Protection; Climate Change; Air Quality, Dust and Noise; Ecosystem Protection and Restoration; Species at Risk; Surface Water; Groundwater; Excess Materials Management; Contaminated Sites; Servicing, Utilities and Facilities; Mitigation and Monitoring; and Consultation.<br>• The MECP also provided a *Client's Guide to Preliminary Screening for Species at Risk.* | November 4, 2022 | The Project Team engaged with Indigenous Communities throughout the study (see Section 6.4). A draft copy of this report will be sent to Joan Del Villar prior to filing of the final report.<br>The Project Team documented the following MECP Areas of Interest in this report: Planning and Policy, Source Water Protection, Climate Change, Noise, Ecosystem Protection, Species at Risk, Surface Water, Groundwater, Servicing, Utilities, Facilities, Mitigation, Monitoring, and Consultation.<br>The Project Team completed an initial *Species at Risk* screening and submitted it to MECP along with an information request letter on September 7, 2022. |
| | In response to the Project Team's submission of the *Species at Risk* screening and information request letter, the MECP provided the following comments:<br>• The MECP provided a list of species within the vicinity of the study area.<br>• A review of the Provincial database of species occurrences notes that the protected habitat of species at risk bats may also occur within the project site. Additional work may be required to confirm the presence of this habitat and other species at risk habitat which cannot be readily identified via this preliminary screening. | November 9, 2022 | Based on information provided by MECP and field investigations completed by the ecology team, it was determined that there is a low possibility of impacting SAR for this project. |
| | In response to the Project Team's submission of the draft ESR, the MECP provided the following comments:<br>• In Section 8.5.1.1 of the Report, it indicates that after discussions with Hydro One, conceptual plans of the recommended design concept will be reviewed subsequent to this Class EA process, during the detailed design phase. Please note that if the outcome results in a significant modification to the project, including impacting the evaluation of alternative solutions or the preferred solution, then a Class EA addendum may be required through the Municipal Class EA process.<br>• The proponent shall continue to engage with Indigenous communities<br>• The ministry expects the report to include at a minimum a qualitative assessment of air quality and odour that discusses the typical air emissions that are released from the proposed undertaking and summarizes the closest sensitive receptors to the existing and proposed pumping station and how the proposed undertaking may impact air quality.<br>• Section 2.3.3 of the Report indicates bat maternity roosting habitats (treed communities) have the potential to be present within the study area. If Species at Risk are observed, it is the responsibility of the proponent to ensure that Species at Risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the proposed activities to be carried out on the site. If the proposed activities cannot avoid impacting protected species and their habitats, then the proponent will need to apply for an authorization under the Endangered Species Act (ESA). If the proponent believes that their proposed activities are going to have an impact or are uncertain about the impacts, they should contact SAROntario@ontario.ca to undergo a formal review under the ESA.<br>• Section 8.2.4 of the Report states, "The rate of infiltration should be sufficiently low that groundwater should be adequately controlled using conventional construction 'dewatering' techniques such as pumping from sumps and ditches." Please note that any potential approval requirements should be identified in the report. Please note that any water extraction over 50,000 L/day will require MECP approval(s) under the Environmental Protection Act and | August 12, 2024 | The Project Team addressed MECP's comments as follows:<br>• The Project Team has noted that an EA addendum may be required if a significant modification is made to the project.<br>• The proponent acknowledges their responsibility to continue engaging with Indigenous communities. To that end, the draft ESR was also circulated to Indigenous communities for review and comment.<br>• An air quality section was added to this ESR. Please see Section 8.1.2. There is no pumping station proposed as part of the project works.<br>• MECP's comment regarding SAR has been noted in Section 10.1 Permits and Approvals.<br>• MECP's comment regarding water extraction activities over 50,000 L/day requiring MECP approval has been noted in Section 10.1 Permits and Approvals. |

| Agency / Group | Comments Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| | Ontario Water Resource Act, such as a Permit to Take Water (PTTW). Certain water taking activities that have been prescribed by the Water Taking Regulation O. Reg. 63/16 may require registration in the Environmental Activity and Sector Registry (EASR) instead of a PTTW. Regardless, a PTTW is required if the water-taking exceeds 400,000 litres per day. | | |
| Ministry of Citizenship and Multiculturalism (MCM) | In response to the Notice of Commencement, the MCM responded with the following comments:<br>• While some cultural heritage resources may have already been identified, others may be identified through screening and evaluation.<br>• The EA may impact archaeological resources and should be screened using the Ministry Criteria for Evaluating Archaeological Potential to determine if an archaeological assessment is needed.<br>• A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment should be undertaken for the study area.<br>• Given that this project covers a large study area, MCM recommends that the Cultural Heritage Report is carried out so that step 1 described above is undertaken early in the planning process. Then, steps 2 and 3 can be undertaken once the preferred alternatives have been selected. | November 28, 2021 | A Stage 1 Archaeological Assessment and a Cultural Heritage Report were completed as part of this EA study. Results of these assessments are described in Sections 2.4 and 8.4. |
| | In response to the Project Team's submission of the draft ESR, the MCM provided the following comments:<br>• Section 2.4.1 should note explicitly that the Stage 1 Archaeological Assessment found significant portions of the study area to be of archaeological potential, and recommended Stage 2 assessment for those areas if included in the preferred alternative.<br>• Section 4.1.4 introduces the criterion "Impacts to Areas of Archeological Potential: Potential to impact archaeological resources within the study area." This creates confusion as to whether it is impacts to areas of archaeological potential or to archaeological resources that is being measured in this criterion. Given that at this point in the process only areas of archaeological potential have been identified (through the Stage 1 Archaeological Assessment) and any archaeological resources in those areas would only be identified during the Detailed Design stage, it would seem that impacts to areas of archaeological potential is the only plausible criterion to be used here. We recommend revising the description of the criterion to better reflect its intent.<br>• Section 4.1.4 also introduces the criterion "Impacts to Cultural Heritage Resources: Potential impacts to the built cultural heritage resources within and adjacent to the corridor, in consideration of their determined cultural heritage values." It is unclear what the last clause of this sentence is intended to mean, given that the cultural heritage value or interest of the potential built heritage resources in the study area will only be determined through a CHER during detailed design. We recommend that the words "in consideration of their determined cultural heritage values" be removed.<br>• Section 8.4.1 says that "Based on the preliminary Stage 1 Archaeological Assessment, it is determined that archaeological potential exists for parts of the study area and therefore the study area retains cultural heritage value or interest." Having archaeological potential does not by itself constitute CHVI; CHVI would be assessed during a Stage 3 Archaeological Assessment for any archaeological sites identified at Stage 2. We recommend that the words from "and therefore" to the end of the sentence be removed. The word "preliminary" can also be removed, as the Stage 1 report has been duly submitted and entered into the Ontario Public Register of Archaeological Reports.<br>• Table 10.1 includes two rows related to MCM, namely "Further Archaeological Assessments" and "Discovery of Human Remains". However, the Description field for the first of these pertains to the discovery of archaeological resources during construction. We recommend that these two Descriptions be merged into a row titled "Discovery of Archaeological Resources During Construction", and that a new description be written for "Further | August 12, 2024 | The Project Team has implemented all the revisions and comments suggest by the MCM into the body of this ESR. |

| Agency / Group | Comments Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| | Archaeological Assessments". This description should note the requirements for further archaeological assessments described in the third bullet under "Technical Studies" in Section 10.2, and in particular that notification from MCM that the archaeological assessment reports have been entered into the Ontario Public Register of Archaeological Reports will be received before construction. We further suggest that Section and Table 10.1 be renamed "Permits, Approvals and Legislative Requirements", since requirements under the Ontario Heritage Act are not permits or approvals per se. | | |
| Ministry of Natural Resources and Forestry (MNRF) | In response to the submission of the Species at Risk screening and information request letter, the MNRF provided the following comments:<br>• The MNRF did not have any addition natural heritage information available besides what is available in LIO.<br>• Restricted activity timing windows are applied to protect fish from impacts of undertakings in and around water during critical life cycle stages. The recommended timing restrictions for this tributary of Twenty Mile Creek is March 1st to June 30th (Note: dates represent when work should be avoided). | September 9, 2022 | The Project Team requested fish records from Fish Creek / Spring Creek that the MNRF could provide. The MNRF noted some species within Spring Creek. This information was incorporated into the Natural Environment Assessment report. |
| | In response to the invitation to the TAC Meeting #2, MNRF provided the following comments:<br>• The MNRF provided information to guide the Project Team in identifying and assessing natural features and resources required by applicable policies and legislation.<br>• If no MNRF interests are identified in the study, then there is no need to circulate subsequent notices to the MNRF office or invite MNRF to participate as part of the TAC. | October 31, 2023 | After a review of MNRF's areas of interest, the Project Team confirmed that there are no impacts identified within those areas. As such, the MNRF was removed from the stakeholder directory and no further project communication was circulated to their office. |
| Niagara Peninsula Conservation Authority (NPCA) | In response to the submission of the Species at Risk screening and information request letter, the NPCA provided a Screening checklist. | September 12, 2022 | The Project Team scheduled a meeting with the NPCA to discuss the permitting requirements as well as input on any potential no-goes in terms of alternative solution options. |
| | A meeting was held between the Project Team (Niagara Region and RVA) and the NPCA to discuss key considerations regarding the floodplain, Spring Creek watercourse, species at risk, and permits and approvals. | December 14, 2022 | The Project Team documented the meeting and continued to engage NPCA throughout the study. Minutes to this meeting can be found in **Appendix 1-6-1.** |
| | NPCA provided the following comments on PIC #2 presentation materials:<br>• The Preliminary Recommended Design, Alternative 5, is one of NPCA's preferred options as it reduces impacts to the floodplain and regulated watercourse.<br>• For this option, please provide an existing survey and the proposed grading plan for NPCA staff review. If the proposed works impact the floodplain, we will provide additional comments. | January 5, 2024 | The Project Team supplied NPCA with CAD drawings of the proposed works including topographic information on February 13, 2024. The Project Team asked NPCA to confirm if there are any impacts to the floodplain as a result of the preferred design concept and if they had any requirements (approvals/applications) for the detailed design process. |
| | NPCA provided the following comments on the preferred design concept:<br>• The regulated flood elevation in this area is 192.52, and there appears to be work proposed in the floodplain which will require a NPCA permit.<br>• NPCA permits up to 50m$^3$ of fill in the floodplain without further studies. Should a volume of fill larger than 50m$^3$ be proposed, NPCA will require a balanced cut/ fill or hydraulic assessment to demonstrate no negative impacts. | March 22, 2024 | The Project Team asked NPCA to confirm if they had requirements with regards to quality and quantity control for stormwater runoff and if NPCA will require any additional measures for quality control. Based on the floodplain elevation of 192.52m, it was determined that there would only be 31.5 m$^3$ of fill within the floodplain area. Therefore, no hydraulic assessment is required based on the identified fill requirements. |
| | In response to the Project Team's questions, NPCA indicated that a grading/fill plan demonstrating the volume of fill will be required. NPCA confirmed there are no addition measures required for quantity/quality controls. | April 10, 2024 | NPCA's comments were taken into consideration and incorporated into this report. A grading/fill plan will be developed during detailed design. |

| Agency / Group | Comments Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| | In response to the Project Team's submission of the draft ESR for review, the NPCA provided the following comment:<br>NPCA's outdated regulation O. Reg 155.06 is referenced within section 10 Additional Work and Approvals (page 89). Please replace this with O. Reg. 41/24: Prohibited Activities, Exemptions and Permits. | August 21, 2024 | The Project Team incorporated NPCA's suggested revision into the body of this ESR. |
| Niagara Region – Natural Environment | The internal Natural Environment department at Niagara Region noted that the study area is affected by a 'regulated floodplain'. If the project requires alteration of the floodplain, the NPCA's approval would be required. | September 21, 2022 | NPCA was consulted as part of this EA study. Topographic survey results along with the preliminary design concept was sent to NPCA for their review and comments. |
| Hydro One | In response to Notice of PIC #1 Hydro One provided the following comments:<br>• Hydro One confirmed that they have existing high voltage transmission facilities within the study area and would like to stay informed on the progress of the study so that they can advise if there are conflicts with potential alternative solutions.<br>• Also noted that should Thirty Rd at Young St. result in a Hydro One station expansion or transmission line replacement and/or relocation, an EA for Minor Transmission Facilities will be required.<br>• If possible, at this stage, please formally confirm that Hydro One infrastructure and associated rights-of-way will be completely avoided, or if not possible, allocate appropriate lead-time in your project schedule to collaboratively work through potential conflicts with Hydro One | February 15, 2023 | The Project Team provided Hydro One with conceptual design alternatives being considered. Project Team identified that Phase 2 Alternatives 2 & 3 were being considered to carry forward, resulting in potential impacts to the vacant corridor. The Project Team offered to arrange a one-on-one meeting to discuss the project's potential impacts to Hydro One assets. |
| | Hydro One noted that they did not attend the TAC Meeting #1 as they have no existing assets within the affected area. They noted that transmission lines are not owned by Hydro one and distribution voltage poles are owned by the Local Distribution Company. Hydro One has the vacant corridor on the south side of Young St.<br>Hydro One noted that transmission lines going directly on top of a roundabout is a safety concern for road users.<br>*"The risk with roundabouts is that they are a form of an intersection where cars slow down considerably and even stop. There are also additional facilities such as pedestrian crosswalks on the periphery of the roundabout. This would result in cars or pedestrians being stopped underneath the transmission line for prolonged periods of time vs a regular road where cars and pedestrians cross quickly. Such an arrangement increases the risk profile for the road users from objects falling from the transmission line – most notable is ice in the winter, however it could be components of the towers or the conductors."* | February 24, 2023 | One-on-one engagement with Hydro One was conducted to address their concerns. |
| | Hydro One confirmed that they are aware Alternative 2 – Intersection Improvements & Close Clayson Road at Northern Terminus is the recommended Phase 2 solution to be carried forward. Noted that the study may require the Project Team to submit a Property Management Proposal (PMP) for Hydro One to fully assess the impact to their vacant transmission corridor. | March 16, 2023 | The Project Team arranged for a one-on-one meeting with Hydro One to discuss the intersection control options for Phase 2's recommended solution – Alternative #2. The meeting was held on April 4th, 2023. |
| | Hydro One provided a Submission Requirements form for preliminary technical review and requested detailed drawings clearly marking the Hydro One corridor boundaries, towers and exclusion zones, and a detailed description of the proposed works. Hydro One noted that the timeline to review is approximately 8-10 weeks. | April 4, 2023 | The Project Team sent Hydro One a Secondary Land Use Technical Review Package for Hydro One's comments on May 2, 2023. The package was submitted as a preliminary technical review and did not represent a final secondary land use proposal. |
| | A meeting between the Project Team and Hydro One was held to discuss the EA study and the Hydro One corridor located along the south side of Young Street. | April 4, 2023 | The Project Team documented the meeting and continued to send Hydro One project notifications throughout the study. Minutes to this meeting can be found in **Appendix 1-6-2.** |
| | Hydro One responded to the preliminary Technical Review Package noted that only a limited review was done from a technical standpoint. Hydro One recommended to move forward with detailed design drawings for the Phase 2 preferred solution – Alternative #2. | August 10, 2023 | The Project Team noted that another Technical Review Package will be submitted to Hydro One for review during the detailed design phase following the completion of this EA study. |

| Agency / Group | Comments Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| | Hydro One responded to the Notice of PIC #2 stating that they did not have sufficient information to comment on potential resulting impacts the proposed works may have on their infrastructure. Hydro One requested to continue to be informed as more information becomes available. | December 13, 2023 | Further consultation with Hydro One will be conducted during the detailed design phase following the completion of this EA study. |
| Niagara Region Wind Farm (NRWF) | A meeting was held with the NRWF to discuss potential impacts to their high voltage transmission poles within the Study Area. | May 3, 2023 | The Project Team documented the meeting and continued to send NRWF project notifications throughout the study. Minutes to this meeting can be found in **Appendix 1-6-3.** |
| | After a meeting with the Project Team, the NRWF asked for statistics on the number of accidents occurred at the intersection of Thirty Rd. and Young St. | May 17, 2023 | The Project Team responded with historical data about accidents occurring at Thirty Rd. and Young St. |
| Township of West Lincoln | A meeting was held between the Project Team and the Township of West Lincoln to provide an overview of the study, discuss the project schedule and next steps. | September 21, 2022 | The Project Team documented the meeting and continued to send the Township of West Lincoln project notifications throughout the study. Minutes to this meeting can be found in **Appendix 1-6-4.** |
| | Following the meeting between the Township and RVA / RMON on September 21, 2022, Township confirmed with AECOM that the TMP should classify Young Street in west of Thirty Road as a rural roadway, with an asphalt platform of 7m to 8m EP to EP. Jennifer noted that east of Thirty Road, Young Street may be urbanized on the south side of the road, however, the Township would be supportive of urbanization or rural cross-section, depending on the proposed cross-section for Thirty Road.<br>They also noted that they would provide a draft standard rural cross-section for project team information. | December 9, 2022 | The Township provided a rural cross-section and will be referenced during preliminary design. |
| | A second meeting was held with the Township of West Lincoln and included AECOM as well. This meeting was held to discuss recommendations from previous studies. | February 2, 2023 | The Project Team documented the meeting and continued to send the Township of West Lincoln project notifications throughout the study. Minutes to this meeting can be found in **Appendix 1-6-4.** |
| | No response or comments were received from the Township of West Lincoln regarding the draft ESR. | N/A | N/A |
| Department of Fisheries and Oceans Canada (DFO) | In response to the invitation to PIC #2, the DFO provided the following comments:<br>Thank you for the notification of the Municipal Class Environmental Assessment (EA) for the area of the Thirty Road at Young Street intersection. The Department reviews projects (works, undertakings, or activities) being conducted in or near waterbodies that support fish. We also review project proposals for impacts to Species at Risk. We do not review notifications for administrative processes. Please visit our website at: https://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html to determine whether your project requires a review by the Department. If you determine that your project needs a review, please complete and submit a Request for Review Form to: FisheriesProtection@dfo-mpo.gc.ca. | November 9, 2023 | The Project Team confirmed that there will not be any impacts to fish habitats or waterbodies based on the current progress of our project. As such, DFO was removed from our project contact list and subsequent notices were not sent to the DFO office. |
| Niagara Region Broadband Network (NRBN) | The Project Team shared the preliminary preferred design with NRBN to get their feedback and approximate costs for potential impacted utilities. The NRBN indicated that they have Fiber optics that run on the hydro poles along Young street and continue through the intersection. They also have fiber optics that turn and head south onto Thirty road. Without knowing what NPEI will be doing with their poles, NRBN cannot provide a cost for the relocation. | April 18, 2024 | NRBN's comments were documented in this report. NRBN will be further engaged during detailed design to address any potential impacted utilities. |
| Niagara Peninsula Energy Inc. (NPEI) | The Project Team shared the preliminary preferred design with NPEI to get their feedback and approximate costs for potential impacted utilities. The NPEI indicated that a cost estimate and relocation plan will take time to develop. NPEI noted that there is no clear-cut solution to relocating our existing poles, especially with the limitations the footprint size of the roundabout present. | May 2, 2024 | NPEI's comments were documented in this report. NPEI will be further engaged during detailed design to address impacted utility infrastructure. |

| Agency / Group | Comments Summary | Date Received | Response and Consideration of Comments in Class EA |
|---|---|---|---|
| Bell Canada | The Project Team shared the preliminary preferred design with Bell to get their feedback and approximate costs for potential impacted utilities. Bell provided files identifying and locating their utility infrastructure within the Study Area. | May 1, 2024 | The Project Team reviewed files provided by Bell and identified potential impacts as a result of the preferred design. Bell's utility infrastructure and potential impacts were documented in this report. Bell will be further engaged during detailed design to address potential utility impacts. |
| Enbridge Gas | The Project Team shared the preliminary preferred design with Enbridge Gas to get their feedback and approximate costs for potential impacted utilities. An automated response was received noting that they are experiencing a high number of submissions and may not be able to meet their normal 15 business day turnaround time. | April 19, 2024 | Enbridge Gas' will be further engaged during detailed design to address potential impacted utility infrastructure. |
| Cogeco | The Project Team shared the preliminary preferred design with Cogeco to get their feedback and approximate costs for potential impacted utilities. Cogeco noted that they do not have any utility infrastructure within the Study Area. | May 2, 2024 | Cogeco's response was documented in this report. |

## 6.4 Indigenous Communities Engagement

Engagement with Indigenous Communities is a key component of the Class EA process. Various Indigenous Communities were notified of the study, to identify any potential issues or concerns regarding possible impacts to Aboriginal and Treaty Rights, or any other interests or questions that the community may have regarding this study. In consultation with the MECP, Niagara Region sought direction on the identification of Indigenous Communities that may have an interest in the Study. MECP confirmed that engagement should proceed with the following Indigenous Communities:

- Haudenosaunee Development Institute / Haudenosaunee Confederacy (HDI)
- Mississaugas of the Credit First Nation (MCFN)
- Six Nations of the Grand River (SNGR)

Table 6.8 below provides a summary of communications between the Project Team and Indigenous Communities. The complete list of Indigenous Communities engaged is provided in Appendix 1-2, while copies of the correspondence and notifications sent are provided in Appendix 1-7.

## 6.5 Review of Draft Environmental Study Report

The draft ESR will be shared with a few key technical agencies, such as MECP, MCM, NPCA, and Township of West Lincoln, and Indigenous Communities to obtain their input and feedback on the report including results from the technical studies, the decision-making process leading up to the preferred design concept and identified impacts and mitigation measures.

Once comments have been received, the ESR will be finalized and placed in the public record for the 30-day public review period.

Table 6.8 Consultation Log of Communications with Indigenous Communities

| Indigenous Community / Organization | Date of Communication Issued | Notification Sent to Community / Organization | Method of Communication | Comments Received | Date Comments Received | Response to Comments Received |
|---|---|---|---|---|---|---|
| Haudenosaunee Development Institute / Confederacy | November 2, 2022 | Notice of Commencement | Email | HDI noted that the Notice of Commencement is not considered engagement or consent for consultation. HDI requested that the Region apply and pay a fee to allow them to have the resources to review and comment on this project. HDI provided an application form. | November 29, 2022 | The project team continued to engage HDI on other notifications and confirmed that all comments to be included as part of the public record for this project. |
| | February 22, 2023 | Notice of PIC #1 | Email | No comments received | - | - |
| | April 20, 2023 | Stage 1 AA Report for Review | Email | No comments received | - | - |
| | November 8, 2023 | Notice of PIC #2 | Email | No comments received | - | - |
| | April 3, 2024 | Natural Environment Assessment Report for Review | Email | No comments received | - | - |
| | July 12, 2024 | Draft ESR for review | Email | No comments received | - | - |
| | November 4, 2024 | Notice of Completion | Email | - | - | - |
| Mississaugas of the Credit First Nation | October 27, 2022 | Notice of Commencement | Email | No comments received | - | - |
| | February 22, 2023 | Notice of PIC #1 | Email | MCFN noted this project is on the treaty lands of MCFN, precisely, the Between the Lakes Treaty No. 3 of 1792. The MCFN Department of Consultation and Accommodation (DOCA) must be in receipt of all Environmental Assessment reports and must be engaged for all Archaeological Assessments. This engagement includes in-field participation by having MCFN community members present when any archaeological assessments are being conducted and a review of all reports prior to | February 23, 2023 | MCFN to be engaged in Stage 2 Archaeological Assessment field work during detailed design. MCFN will be provided a copy of the draft ESR prior to filing for 30-day public review. |

| Indigenous Community / Organization | Date of Communication Issued | Notification Sent to Community / Organization | Method of Communication | Comments Received | Date Comments Received | Response to Comments Received |
|---|---|---|---|---|---|---|
| | | | | submission to the ministry for clearance. This engagement is at cost of the proponent. | | |
| | April 20, 2023 | Stage 1 AA Report for Review | Email | No comments received | - | - |
| | November 8, 2023 | Notice of PIC #2 | Email | No comments received | - | - |
| | April 3, 2024 | Natural Environment Assessment Report for Review | Email | No comments received | - | - |
| | July 12, 2024 | Draft ESR for review | Email | No comments received | - | - |
| | November 4, 2024 | Notice of Completion | Email | - | - | - |
| Six Nations of the Grand River | November 3, 2022 | Notice of Commencement | Email | The Archaeology Supervisor at SNGR acknowledged that they have an interest in participating in this project. | November 4, 2022 | The Region replied and noted the Nation would be informed of any updates and upcoming meetings for the project. |
| | February 22, 2023 | Notice of PIC #1 | Email | No comments received | - | - |
| | May 23, 2023 | Stage 1 AA Report for review | Email | No comments received | - | - |
| | November 8, 2023 | Notice of PIC #2 | Email | No comments received | - | - |
| | April 3, 2024 | Natural Environment Assessment Report for Review | Email | On April 3, 2024, SNGR asked if there were any measures in place to mitigate for lost green space and trees and if there was more information available on the snapping turtles observed in the Study Area in 2021.<br>On April 4, 2024, SNGR requested a 10:1 replacement ratio for any felled trees. | April 3, 2024 \| April 4, 2024 | The Project Team responded that there are measures to mitigate impacts to green spaces and trees and tree removal is limited for this project. The Team clarified that the snapping turtles were recorded outside of the Study Area. The Region informed SNGR that the Region's policy for tree replacement is a 2:1 ratio, however the Nation's request will be reviewed further during the detailed design phase. |
| | July 12, 2024 | Draft ESR for review | Email | No comments received | - | - |
| | November 4, 2024 | Notice of Completion | Email | - | - | - |

| Indigenous Community / Organization | Date of Communication Issued | Notification Sent to Community / Organization | Method of Communication | Comments Received | Date Comments Received | Response to Comments Received |
|---|---|---|---|---|---|---|
| Six Nations of the Grand River Development Corporation (SNGRDC) | - | - | Email | The SNGRDC reached out to the Region to express concerns regarding potential impacts to their Niagara Regional Wind Farm (NRWF) poles within the study area. The SNGRDC is a 50% owner of the NRWF.<br><br>The SNGRDC noted that relocating the windfarm poles would have negative environmental impacts and further disturbance to the land. Additionally, there would be significant costs to relocate the windfarm poles. | June 29, 2023 | The Region provided a response on July 12, 2023, to SNGRDC. A meeting with the NRWF had also taken place on May 3, 2023, prior to receiving this letter. The Study recommendation also does not require the relocation of any windfarm poles. |
| | July 12, 2023 | Response to Letter Received June 29, 2023 | Email | No comments received | - | - |
| | July 12, 2024 | Draft ESR for review | Email | No comments received | - | - |
| | November 4, 2024 | Notice of Completion | Email | - | - | - |

# 7.0 DESCRIPTION OF THE PREFERRED DESIGN

## 7.1 Design Criteria

In developing the preliminary design for the preferred design concept, various design criteria were developed to ensure consistent design standards were incorporated. The design criteria were developed based on the Niagara Region's current policies, plans, and design standards; Transportation Association of Canada (TAC), TAC Canadian Roundabout Design Guide; NCHRP Report 1043 on Roundabouts, Ontario Traffic Manual (OTM); MTO Design Supplement for TAC (2017); and MTO Roadside Design Manual and developed further through consultation with the City and project team.

In developing the design criteria, items that were considered included, but not limited to: design and posted speeds; horizontal and vertical alignments; cross section and ROW widths; existing site constraints; and roadway drainage.

Design criteria for the geometric design of the roundabout was undertaken utilizing Transportation Association of Canada – Canadian Roundabout Design Guide (2017), Transportation Association of Canada – Geometric Design guide for Canadian Roads (2017), as well as supporting documents including the National Cooperative Highway Research Program – Research Report 1043 Guide for roundabouts (2023) and MTO design guidance documents. The preliminary design was checked to ensure that key design parameters were achieved, including fastest path calculations, entry deflections, entry and exit radii, and splitter island configurations. During the development of the alternative and preferred designs, it was also determined that additional accommodation should be given to large agricultural vehicles, such as combines and tractors with large trailers to ensure that local farmers would be able to safely and efficiently maneuver through the roundabout. These key design parameters and a complete list of the design criteria developed are identified below and provided in Appendix 8.

Table 7.1 Design Criteria

| ITEM | REFERENCE | DESIGN STANDARD |
|---|---|---|
| **ROAD** | | |
| ***Classification*** | | |
| Road Classification | TAC Table 2.6.2 | RAU70 |
| Urban/ Rural | | Rural |
| Local/ Collector/ Arterial | | Arterial |
| Design Speed, (km/h) | | 70 km/h |

| ITEM | REFERENCE | DESIGN STANDARD |
|---|---|---|
| Posted Speed, (km/h) | | 60 km/h |
| ***Horizontal Alignments*** | | |
| Rmin. (m) – Minimum Radii | | |
| NC – Normal Crown (+0.02m/m) | TAC Table 3.2.4 | 1680m |
| RC – Reverse Crown (+0.02m/m), $e_{max}$=0.04 | TAC Table 3.2.4 | 290m |
| RC – Reverse Crown (+0.02m/m), $e_{max}$=0.06 | TAC Table 3.2.4 | 330m |
| Superelevated Rate e=+0.04m/m | TAC Table 3.2.4 | 200m |
| Superelevated e=+0.64m/m | TAC Table 3.2.4 | 190m |
| Length of Superelevation Runoff for Two-Lane Crowned Urban Roadways | | |
| ***Vertical Alignments*** | | |
| Minimum Grade – With Curbs (%) | TAC 3.3.2.5 | 0.5% |
| Maximum Grade (% Rolling - % Mountainous) | TAC Table 3.3.1 | 4% |
| Crest Vertical Curve Kmin. – Stopping Sight Distance | TAC Table 3.3.2 | 17 |
| Crest Vertical Curve Kmin. – Passing Sight Distance | TAC Table 3.3.3 | 255 |
| Sag Vertical Curve Kmin. – Non-Illuminated Control | TAC Table 3.3.4 | 23 |
| Sag Vertical Kmin. – Illuminated Control | TAC Table 3.3.5 | 10-12 |
| Stopping Sight Distance – Level Roadway (m) | TAC Table 2.5.2 | 105 m |
| Stopping Sight Distance – On Grades (m) | TAC Table 2.5.3 | Varies, to be calculated during design |
| Passing Sight Distance (m) | TAC Table 2.5.4 | 490 m |
| ***Cross Sections*** | | |
| Through Lane Width (m) | TAC Table 4.2.3 | 3.0 – 3.7 m (3.5 m) |
| Paved Shoulder Width (m) | - | 1.5m |
| Tangent Section Cross Fall, % | - | 2% |
| Clear zone (m) | TAC Table 7.3.1 | 6.0 – 8.5 m (3:1 fill Slopes) |
| ***Intersection*** | | |
| Minimum Grade – Along Curb Radius (%) | TAC Table 3.3.2.5 | 0.6% |
| Design Vehicle for Turning Movements | - | HSU Truck |
| Control Vehicle for Turning Movements | - | WB-20 Truck |
| Control Vehicle for Turning Movements | | Farm Vehicles, including Tractor with Trailer and Combine |

| ITEM | REFERENCE | DESIGN STANDARD |
|---|---|---|
| Deceleration Length (m) | TAC 2.5.3 | Varies, to be calculated during design |
| Left Turn Lanes | | |
| Left Turn Lane Width – Not Adjacent to a Median (m) | TAC 4.3.2.3 | 0.0 m to 0.25 m less than through lane width (3.25m min.) |
| Left Turn Taper Ratio (m) | TAC Table 9.17.1 | 30:1 (105m) |
| Left Turn Horizontal Curve Radius (m) | TAC Table 9.17.1 | 1000m |
| Storage Length for Left Turn (m) | Per Transportation Study | 15m |

## 7.2 Road and Intersection Design

### 7.2.1 Traffic Operations and Safety

Based on the results of the warrant analysis for future (2041) traffic conditions and intersection operations analysis from the Detailed Transportation Assessment report, the roundabout configuration is forecast to operate with reserve capacity, nominal delays, and no queueing concerns. Additionally, the roundabout configuration will serve to reduce angle collisions at Thirty Road and Young Street intersection, maintain the arterial functionality of Thirty Road, and service the minor traffic volumes along Young Street. The geometric design of the roundabout also accounts for large vehicles making the west-to-north right turn movement, while also accommodating farm vehicle traffic.

### 7.2.2 Active Transportation

To align with recommendations outlined in the Smithville Transportation Master Plan (2023) and in consideration of comments received from technical agencies and the public following PIC #2, active transportation facilities were included in the preliminary design of the Thirty Road and Young Street roundabout, specifically, the addition of cycling facilities.

On Thirty Road, 1.5m wide paved on-road bike lanes with a 0.5m buffer have been incorporated north and south of the approaches to the intersection, prior to the start of the splitter islands. Where splitter islands are present on Thirty Road, 1.8m wide paved curb-faced bike lanes have been included. A 1.5m wide paved shoulder that could accommodate pedestrian and cyclists has been provided along Young Street just outside the functional area of the intersection. A 3.0m wide multi-use path is proposed between the pedestrian crossings on all 4 legs of the roundabout. The final design including cycling facilities will be subject to OTM Book 18 and will be reviewed during detailed design. Furthermore, pedestrian crosswalks at the roundabout and the need for PXOs will be determined during

the detailed design stage. The Town of West Lincoln, in coordination with the Region, will manage winter operations for cycling facilities to ensure efficient and safe transportation operations.

### 7.2.3 Illumination

Additional illumination is typically required at roundabouts, especially in rural areas. Illumination will be provided within the roundabout itself and on the approach legs. Final street lighting design will be determined during the detailed design stage.

This additional illumination is to be implemented in such a way (i.e., shields) as to prevent spillage into nearby residential dwellings to minimize the impacts to the properties. It will also be in compliance with Niagara Region's Traffic Signal and Illumination Standards.

## 7.3 Preferred Design Configuration

The below figures showcase the refined preferred design concept after taking into consideration comments received from technical agencies and the public.

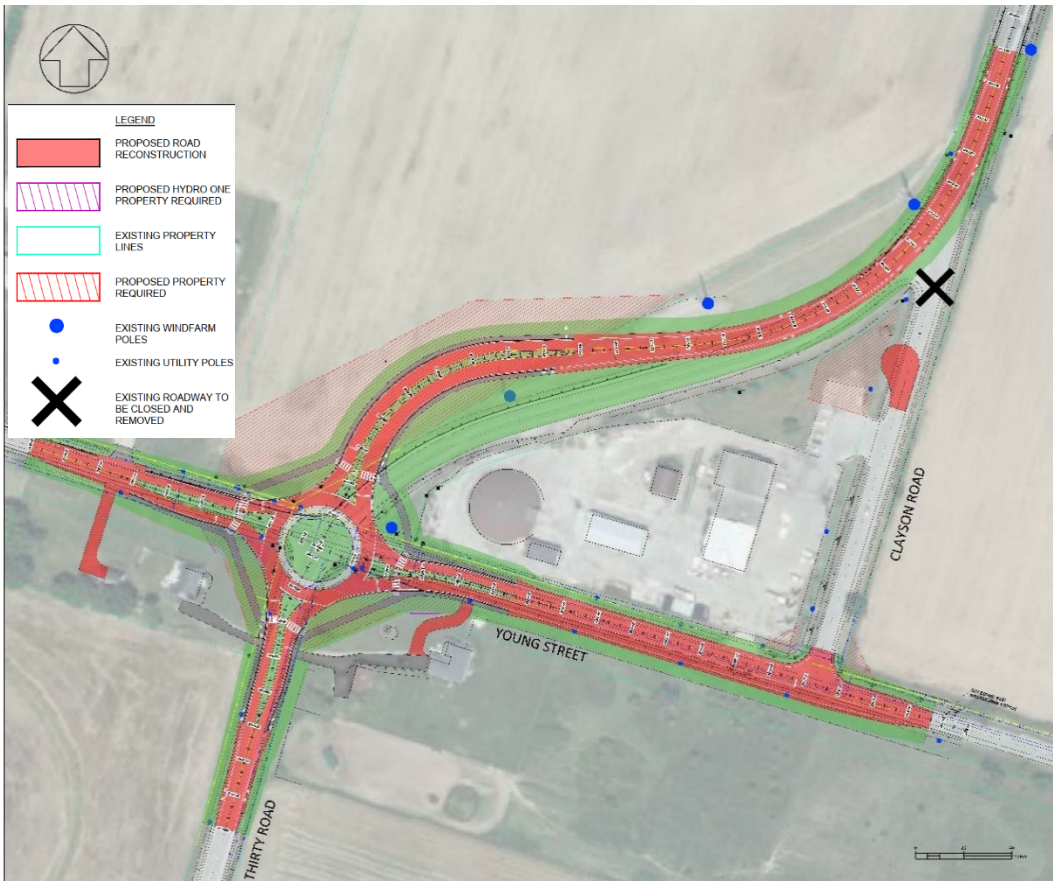


Figure 7.1 Preliminary Design Concept

Figure 7.2 is a representative cross section of the approach to the roundabout on all four (4) legs of the intersection. This is a representative cross section as the widths of the various elements such as the concrete median will have varying widths along each leg.

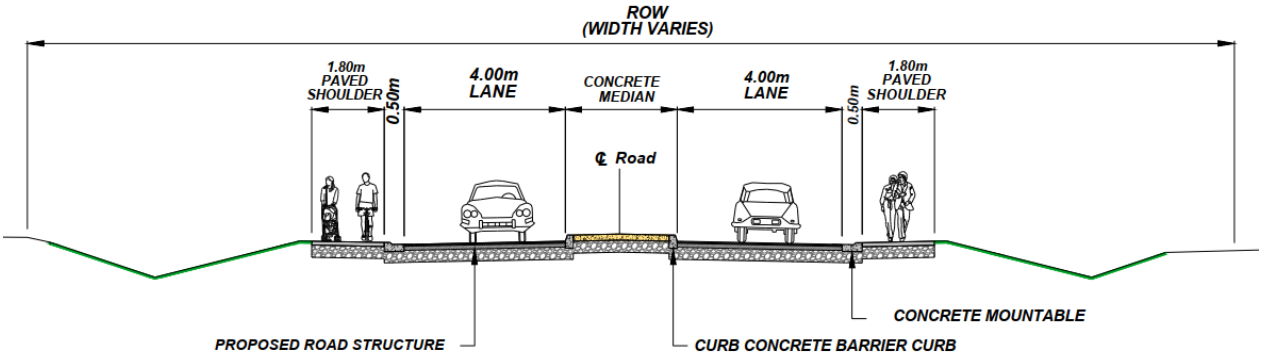


Figure 7.2 Representative Cross Section

## 7.4 Geotechnical Recommendations

Preliminary geotechnical recommendations for the design and construction of the roadway improvements were developed based on the subsurface soil and groundwater conditions encountered during the preliminary geotechnical investigation described in Section 2.5. The full geotechnical investigation report is provided in Appendix 6.

### 7.4.1 Roadway Reconstruction Considerations

Given the conditions of the roadway and observed granular depths, a full depth reconstruction should be considered, especially along Thirty Road and Clayson Road where signs of subgrade failure were evident. A partial depth reconstruction may also be considered if the grade is able to be raised with additional granular material, which may be preferred along Young Street where the road condition was generally better than Thirty Road and Clayson Road.

A partial depth reconstruction is expected to have a reduced lifespan and higher maintenance costs with a lower initial cost and would not allow for removal of any unsuitable subgrade materials which may be present. A full depth reconstruction would have a higher initial cost and reduced maintenance requirements and would allow for the repair/removal of unsuitable subgrade soils.

#### Partial Depth Reconstruction

Partial depth reconstruction of the pavement structure would consist of a ‘peel and pave’ or ‘pulverised and pave’ method. A ‘peel and pave’ approach would involve complete removal

of the existing asphalt layers, re-grading, and compaction of the existing granular base material. A 'pulverise and pave' approach would include the pulverisation of existing asphalt materials, combining it with the underlying granular materials. Similarly, the road would be re-graded and new granular base materials would be placed and compacted. The new asphaltic concrete layers would then be placed at the surface.

#### Full Depth Reconstruction

A full depth reconstruction would consist of the complete removal of existing asphalt layers and granular base materials to the proposed subgrade elevation. This approach would provide a full depth of granular base material, which therein increases the lifespan of the pavement structure. Additionally, the existing grade of the roadway would be maintained, where raising the grade is not feasible. The existing asphaltic concrete could be pulverised into a well-graded granular product which would be reused within the sub-base course material, depending on its gradation.

## 7.5 Drainage Improvements

Roadway drainage will be accommodated using catch basins emptying into roadside ditches, which will outlet to existing ditches at the Study Area limits. The NPCA noted that the regulated flood elevation in the area is 192.52m and some of the works proposed are within the floodplain, which will require an NPCA permit.

## 7.6 Preliminary Cost Estimates and Timelines

### 7.6.1 Preliminary Construction Timelines

Construction timelines to implement the preferred design concept have not been developed as it will be determined based on capital budget and subject to Council approval.

### 7.6.2 Preliminary Capital Cost Estimates

A high-level preliminary cost estimate has been prepared for the construction of the recommended design. It is important to note that the construction cost estimate for the preliminary design was based on the preliminary design and is subject to refinement during detailed design phase. The preliminary cost estimate to complete the reconstruction of the roadway and roundabout intersection is $8,326,878.05 including HST, as shown in the Table 7.2 below.

Table 7.2 Preliminary Cost Estimates for the Recommended Design

| Item | Cost |
|---|---|
| General | $500,000 |
| Roads | $2,063,205 |
| Storm Sewers | $250,000 |
| Electrical | $600,000 |
| Provisional Items | $50,000 |
| Utility Relocations – Bell | $150,000 |
| Utility Relocations – NPEI | $200,000 |
| Utility Relocations – Enbridge Gas | $255,000 |
| Utility Relocations – Cogeco | $75,000 |
| Utility Relocations - NRBN | $50,000 |
| **Subtotal** | **$4,193,205** |
| Contingency (30%) | $1,257,961.50 |
| Engineering (30%) | $1,257,961.50 |
| Non-recoverable HST (1.0176%) | $42,670.05 |
| Property Acquisition Costs (7875.4m$^2$) | $1,575,080.00 |
| **Total (Including HST)** | **$8,326,878.05** |

### 7.6.3 Operating Costs

Ongoing maintenance costs of the roundabout will include center island landscaping, as well as sign and illumination maintenance. For the purposes of this study, the maintenance costs are assumed to be approximately $10,000.00 per year. Comparatively, for a signalized intersection, maintenance costs are assumed to be approximately $5,000 per year as well as approximately $400,000 every 20 years for signal equipment replacement. Accordingly, the roundabout should experience an ongoing benefit in reduced maintenance costs vs a signalized intersection.

# 8.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

## 8.1 Socio-Economic Environment

### 8.1.1 Property Requirements and Access Impacts

The avoidance of significant property requirements was a key criterion in the identification and evaluation of alternative solutions by the project team. There are several properties that were impacted by all the alternative configurations. One of the impacts to the properties south of Young Street include restricted access to their driveways and limited turning movements.

With the implementation of a roundabout, the southwest property would not be able to access their driveway when travelling north on Thirty Road nor turn out of their driveway and make a left towards the intersection, preventing the residents from travelling in any direction except south. For the property in the southeast corner, residents would be unable to access their driveway when travelling south on Thirty Road or make a left turn out of their driveway. To mitigate these access impacts, the Region has proposed to provide these properties with a second driveway that will provide residents with full turning movements and unrestricted access to their property. Preliminary design drawings in Appendix 9 illustrates the approximate location of these new driveways. Design and location of the new driveways will be further confirmed in consultation with the affected property owners during detailed design.

As part of this study, it is recommended that the Region acquire sufficient frontage from the properties noted below in Table 8.1 to accommodate the proposed intersections improvements. Preliminary design drawings in Appendix 9 also illustrate areas where the additional property will be required.

Preliminary discussions were held with property owners to discuss the proposed improvements and impacts on their properties. Impacted property owners were contacted via the following methods:

- Initial letter noting anticipated property impacts sent on October 10, 2023.
- A follow-up letter with attached recommended design concept was sent on December 14, 2023.
- A meeting with owners of 3094 Thirty Road, the southwest corner of Thirty Road and Young Street, was held on January 11, 2024, to discuss property impacts.

- A third letter with attached recommended design concept was sent on January 22nd, 2024.
- A meeting with owners of 6285 Young Street, the northeast corner of Clayson Road and Young Street, was held on February 23, 2024, to discuss property impacts.
- A meeting with owners of 3093 Thirty Road, the southeast corner of Thirty Road and Young Street, was held on March 5, 2024, to discuss property impacts.

Further discussions with the impacted property owners are to continue through the detailed design phase.

Table 8.1 Property Impacts and Requirements

| Property Address | Estimated Area |
|---|---|
| 6419 Young Street | 75.9 $m^2$ |
| Northwest corner | 4342.8 $m^2$ |
| Regional Yard | 837.0 $m^2$ + 109.0 $m^2$ |
| 3093 Thirty Road | 829.8 $m^2$ + additional driveway for access |
| 3094 Thirty Road | 348.1 $m^2$ + additional driveway for access |
| 6470 Young Street | 98.5 $m^2$ |
| Hydro One Corridor | 532.1 $m^2$ + 589.7 $m^2$ |
| 6285 Young Street | 112.5 $m^2$ |

Although anticipated preliminary property requirements to implement the study recommendation have been identified, actual requirements are to be confirmed during the detailed design phase of the project. Preliminary design drawings in Appendix 9 illustrate the estimated area of each property required to implement the preferred design.

### 8.1.2 Air Quality

With the implementation of a roundabout, air quality is anticipated to be improved. The use of roundabouts generally produces fewer greenhouse gas emissions as vehicles are continuously moving, reducing vehicle delay times, idling, and the associated emissions. From a carbon-release perspective, the undertaking of the proposed works will result in improved movement of traffic, resulting in less idling time and potentially reducing the amount of greenhouse gas emissions from traffic, and thus, improving air quality.

Construction activities may have temporary impacts to air quality as it involves heavy equipment that generates air pollutants and dust. Operating procedures will be diligently

implemented to deal with these emissions. Measures to minimize these impacts should include best management practices such as regular cleaning of construction sites and access roads; covering fine-grained material loads; prompt cleaning of paved streets where tracking of soil or dust has occurred; and reduced speeds when travelling on sites with unpaved surfaces.

## 8.2 Natural Environment

The project will have minor impacts on terrestrial and aquatic environment components within the Study Area; however, the overall function of the larger system is not expected to be significantly impacted by the proposed project. Vegetation and habitats to be lost are anthropogenic and provide habitats for common species tolerant of human activities.

The results of the natural environment assessment and mitigation measures identified are in the full Natural Environment Assessment Report in Appendix 3.

### 8.2.1 Vegetation

Potential direct impacts to terrestrial vegetation as a component of road realignment and roundabout construction include complete removal through construction and grading activities, as well as vegetation clearing to support surveying and construction equipment access. Indirect impacts to woody vegetation along the periphery of construction areas may occur due to damage to roots, stems, and branches through interaction with construction equipment. The removal of some roadside trees may also be required. Temporary impacts to Cultural Meadow habitats within the ROW may occur if areas are required for laydown and staging. These areas are occupied by pioneering native and exotic plant species. No other communities are proposed to be impacted by this alternative, including wetlands. The following measures are recommended to reduce impacts from vegetation removal:

- To prevent incidental impacts to nesting birds, (including at-risk and rare species) as well as bat maternity colonies, clearing of unmaintained and/or woody vegetation should be restricted to outside of the migratory bird nesting seasons, April 1 through September 30.
- Contractors should employ Clean Equipment Protocols to prevent movement of exotic invasive species to and throughout the project area.

### 8.2.2 Wildlife and Wildlife Habitats

Potential impacts to wildlife and their habitats can occur during construction through direct impacts such as injury and habitat loss and through indirect impacts such as avoidance of areas of active construction and the resulting modification to established daily movement patterns. Construction activities also have the potential to indirectly affect all other wildlife within the surrounding landscape through vibration along with light and noise pollution. This disturbance will be temporary, and it is anticipated that local wildlife is accustomed to human disturbances.

Vegetation clearing has potential to impact breeding birds through disturbance of nesting birds and destruction of nests, eggs and young. Additionally, dead/dying, or injured trees within the Study Area may provide habitat for at-risk bats and their active-season maternity colonies. Candidate habitat for SAR bats (treed vegetation communities) is present within the Study Area, as are individual trees over 10 cm diameter breast height (DBH) that could provide this habitat.

Construction activities required to implement the preferred alternative will impact terrestrial wildlife habitats and have the potential to impact individuals. The following measures are recommended to reduce these impacts:

- To prevent incidental impacts to nesting birds (including at-risk and rare species) as well as bat maternity colonies, clearing of unmaintained and/or woody vegetation will be restricted to outside of the migratory bird nesting and bat maternity seasons, generally April 1 through September 30. If vegetation clearing must occur within this window, a qualified ecological professional should be retained to confirm no birds or bats are incidentally harmed by vegetation removals.
- Erosion and Sediment Control (ESC, e.g. silt fencing) should be designed and installed to provide the added function of wildlife barrier fencing.

### 8.2.3 Fish and Fish Habitats

No in water works are required for the preferred project alternative. Provided appropriate mitigation measures discussed in this report are implemented prior to commencing work, impacts associated with most activities near water can be avoided. While residual effects are not anticipated for the work proposed to the ditch lines, sedimentation of sensitive receptors such as the tributary of Spring Creek need to be considered and have been addressed through the various recommendations provided above.

### 8.2.4 Groundwater

During construction, the static groundwater level is anticipated to be below the depths of excavation. Regardless, some infiltration of water from more permeable seams, as well as from surface runoff, should be anticipated, especially during the wet times of the year. The rate of infiltration should be sufficiently low that groundwater should be adequately controlled using conventional construction 'dewatering' techniques such as pumping from sumps and ditches. Increased volumes of water should be anticipated when making connections to existing services, or if excavations extend into the cobble layer. Surface water should be directed away from the excavations. Further details are provided in Appendix 6.

### 8.2.5 Source Water Protection and Hydrologic Features

There are no impacts anticipated to source water protection areas as the preferred design does not extend into the northern limits of the Study Area. The NPCA noted that the regulated flood elevation in the area is 192.52m and some of the works proposed are within the floodplain, which will require an NPCA permit. The NPCA permits up to 50$m^3$ of fill in the floodplain without further studies being completed. Based on the floodplain elevation of 192.52m, it was determined that there would only be 31.5 $m^3$ of fill within the floodplain area. Therefore, no further studies related to impacts to the floodplain will be required.

## 8.3 Climate Change

Project impacts and resiliency to climate change were taken into consideration during the Study and will be carried forward into design. Considering how a project contributes to climate change, through greenhouse gas emissions or its effects on the natural environment is important to the planning process as it allows proponents to consider climate mitigation measures that will avoid and/or minimize such effects. Furthermore, considering how climate change may affect a project is critical to the planning process as it enables proponents to make informed decisions to increase infrastructure resilience and adapt to changing environmental conditions.

Climate change was an important factor in determining the intersection control for Thirty Road and Young Street. Traffic signals and all-way stops would result in idling cars during peak traffic volumes. Roundabouts maintain traffic flow, thus reducing idling and vehicle greenhouse gas emissions.

Impacts to the natural environment were also a significant factor in evaluating the realignment of the north leg of Thirty Road. The design alternative with minimal impacts to surrounding agricultural lands was Alternative 5 – Roundabout Intersection with Thirty Road Realigned South of the Windfarm Poles and therefore, selected as the preferred design concept.

## 8.4 Cultural Heritage Resources

Section 8.4 describes impacts to the cultural heritage component of the environment. Cultural heritage resources include archaeological resources, built heritage resources, and cultural heritage landscapes.

### 8.4.1 Impacts to Archaeological Resources

Based on the Stage 1 Archaeological Assessment, it is determined that archaeological potential exists for parts of the study. The Stage 1 Archaeological Assessment Report recommends the following:

3. Stage 2 archaeological survey through pedestrian survey at 5m intervals is recommended for much of the survey area (agricultural fields recently ploughed). As per Section 7.7.4, Standard 2, All areas that cannot be ploughed will undergo test pit archaeological survey as per Section 2.1.2, Standards 1 through 9 of the Standards and Guidelines for Consultant Archaeologists (the Ministry 2011).
4. Poorly drained areas, areas of steep slope and areas of previous disturbance, including the entirety of the area between Clayson and Thirty Road, within the Study Area will be mapped and photo-documented during the Stage 2 archaeological assessment as they possess low archaeological potential.

Stage 2 (and any further recommended archaeological assessment) will be completed as soon as possible during detailed design and prior to any ground disturbing activities. The archaeological assessment report will be submitted by the licensed archaeologist to the Ministry of Citizenship and Multiculturalism (MCM) for review in accordance with the Ontario Heritage Act.

Recommendations from the Stage 1 Archaeological Assessment and from any subsequent recommended assessments (e.g., Stage 2, 3, 4) will be incorporated into the detailed design.

Should previously undocumented archaeological resources be discovered, they may indicate a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must

cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the Ontario Heritage Act.

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11, the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism (MCM) should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.

The full report is provided in Appendix 4.

### 8.4.2 Impacts to Built Heritage Resources and Cultural Heritage Landscapes

As mentioned in Section 2.4.2, the CHAR identified 2 properties, 3093 Thirty Road and 6285 Young Street, with potential for cultural heritage value or interest.

Based on the results of the report, it is recommended that both properties be subject to a property-specific Cultural Heritage Evaluation Report (CHER) prior to any impacts to or adjacent to the property. The property-specific CHER would identify if the property is of cultural heritage value or interest and would develop a Statement of Significance and list of heritage attributes. If heritage attributes are identified through the CHER, a Heritage Impact Assessment (HIA) will be conducted during detailed design to specifically assess the impacts of the proposed improvements to the properties.

The full report is provided in Appendix 5.

## 8.5 Servicing, Utilities, and Facilities

### 8.5.1 Utilities

Based on the EA and recommended improvements, utility infrastructure conflicts are expected and will require relocations to implement the preferred solution as described in the table below. All utility impacts, including location, depths, and relocation requirements are to be confirmed prior to construction, in direct consultation with the affected utility companies. New utility installations will be coordinated as required.

Table 8.2 Potential Impacted Utility Infrastructure

| Road Segment / Location | Utility Type | Description |
|---|---|---|
| Thirty Rd and Young St corridors | 8 NPEI Utility Poles | Relocation Required |
| Southeast corner of Thirty Rd and Young St intersection | 1 Bell Pedestal | Relocation Required |
| Northeast corner of Thirty Rd and Young St | 1 Bell Interface Panel | Relocation Required |
| Southeast corner of Thirty Rd and Young St intersection | 2 Cable Pedestals | Relocation Required |
| Along Thirty Road | Approx. 450m of 4" extra high pressure steel coated gas mains (Enbridge) | Relocation Required |
| Along Young Street | Approx. 400m of 4" intermediate pressure plastic gas mains (Enbridge) | Relocation Required |

To relocate the eight (8) NPEI utility poles, additional poles may be required to be relocated outside of the reconstruction area due to maximum allowable deflection of utility lines at a pole. The extent of additional pole relocations will be determined when NPEI undertake their design of the above identified pole relocations. This will be completed during detailed design. Relocation of NPEI utility poles may potentially impact NRBN infrastructure, which will be confirmed during detailed design.

It is anticipated that the preferred design concept will reduce the cover over the existing Bell infrastructure in several areas, leading to possible relocation to ensure minimum cover is maintained. There is also a Bell interface panel which may potentially require relocation due to a realigned ditch. Potential impacts to Bell utility infrastructure will be confirmed during detailed design in consultation with the utility company.

It is also anticipated that majority of the existing Enbridge Gas infrastructure within the project limits will be impacted by the proposed works. The relocations are required due to modifications of the right of way limits (i.e. widening), as well as changes in grading that may reduce cover over existing gas lines. Approximately 450m of 4" extra high pressure steel coated gas mains on Thirty Road will need to be relocated, and approximately 400m of

4" intermediate pressure plastic gas mains on Young Street will need to be relocated, including any associated valves and appurtenances.

#### 8.5.1.1 HYDRO ONE

Hydro One owns a transmission corridor with no current infrastructure along the south side of Young Street. From the development and evaluation of alternative solutions and design concepts, it was identified that there may be impacts to the vacant Infrastructure Ontario corridor dedicated to potential future Hydro One infrastructure. These lands are required to accommodate both traffic operations and lighting requirements. It is noted that the actual impacts to Hydro One's transmission corridor boundaries, profile and cross-section of the intersection would be confirmed during the detailed design phase of the study, following the completion of the Class EA.

Hydro One was initially opposed to encroachment on this corridor due to safety concerns, resulting in considerable coordination with the agency. After discussions with Hydro One, they have requested conceptual plans of the recommended design concept for review, to which Niagara Region has agreed. Niagara Region will provide drawings during the detailed design phase to Hydro One for review. It is assumed that Hydro One is receptive to Niagara Region purchasing a portion of their land to implement the recommended design concept. This will require additional consultation during the detailed design phase to secure the required property.

### 8.5.2 Niagara Region Wind Farm Poles

As previously identified, the wind farm poles would be extremely costly to relocate and result in significant environmental impact. As such, the preferred design concept avoids the wind farm poles and does not have any anticipated impact.

### 8.5.3 Drainage and Stormwater Management

Existing stormwater runoff is accommodated via surface drainage directly to roadside ditches, with no existing storm sewer network within or adjacent to the study area. Accordingly, for the preferred design stormwater runoff will be accommodated through the continued use of roadside ditches. Where possible, runoff will be directed to roadside ditches directly, however in areas where the roadway is being urbanized, the detailed design should utilize catchbasins outletting directly to realigned roadside ditches.

Although it is anticipated that peak stormwater flows will increase due to the increase in impervious materials following construction of the preferred design, the NPCA confirmed that they do not require any additional measures for quantity and quality controls for

stormwater runoff. However, there may be opportunities to provide low-impact development (LID) features (such as bio-swales, wet ponds, infiltration trenches or chambers) within the existing ROW adjacent to the realigned north leg of Thirty Road, should the Region wish to consider during detailed design. This may be completed in consultation with NPCA.

The NPCA permits up to 50$m^3$ of fill in the floodplain without further studies being completed. Based on the floodplain elevation of 192.52m, it was determined that there would only be 31.5 $m^3$ of fill within the floodplain area. Therefore, no further studies related to impacts to the floodplain will be required.

# 9.0 MONITORING

Following the completion of Detail Design, contract drawings and specifications will be developed to allow the project to be tendered for construction. During construction, the on-site Contract Administrator will confirm that implementation of environmental mitigation measures and key design features are consistent with the contract and that commitments made in this EA document as well as conditions outlined in environmental permits and approvals are adhered to. In addition, the effectiveness of the environmental mitigation measures shall be assessed to confirm that the measures are providing the expected control and/or protection. Regular inspection of measures shall be undertaken to confirm they are maintained, functioning and effective and that any necessary repairs are completed expeditiously. For any unanticipated environmental issues that may arise during construction, the Contract Administrator will confirm that additional mitigation measures are provided, as required.

An Environmental Inspector will also visit the site on a regular basis to confirm that the environmental protection measures are functioning and effective, that timing windows and permits and approvals are adhered to, and to provide recommendations for additional environmental mitigation measures, as necessary. In the event problems develop, appropriate Regional and external representatives will be contacted to provide additional input and to address specific notification requirements as may be required.

# 10.0 ADDITIONAL WORK AND APPROVALS

## 10.1 Permits and Approvals

The following approvals have been identified as potentially being required prior to the implementation of the proposed works:

Table 10.1 Permits, Approvals, and Legislative Requirements

| Agency | Permit / Approval | Description |
|---|---|---|
| NPCA | Permit | Any proposed development, interference, or alteration within areas under O. Reg. 41/24: Prohibited Activities, Exemptions and Permits, requires a permit from NPCA. |
| | Grading/Fill Plan | Based on the preliminary design, the NPCA determined that the proposed works fall within the regulated floodplain. Therefore, an NPCA permit will be required during detailed design and construction. As part of the permit application, NPCA will require a grading/fill plan demonstrating the volume of fill. |
| MECP | SAR Permitting | No permitting for SAR protected under the ESA is anticipated based on field work and habitats that have been identified within the Study Area, assuming that appropriate mitigation measures are followed (e.g., timing windows). It is the responsibility of the proponent to ensure that SAR are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the proposed activities to be carried out on the site. If the proposed activities cannot avoid impacting protected species and their habitats, then the proponent will need to apply for an authorization under the ESA. If the proponent believes that their proposed activities are going to have an impact or are uncertain about the impacts, they should contact SAROntario@ontario.ca to undergo a formal review under the ESA. |
| | Permit to Take Water | Any water extraction over 50,000 L/day will require MECP approval(s) under the Environmental Protection Act and Ontario Water Resource Act, such as a Permit to Take Water (PTTW). Certain water taking activities that have been prescribed by the |

| Agency | Permit / Approval | Description |
|---|---|---|
| | | Water Taking Regulation O. Reg. 63/16 may require registration in the Environmental Activity and Sector Registry (EASR) instead of a PTTW. Regardless, a PTTW is required if the water-taking exceeds 400,000 litres per day. |
| MCM | Discovery of Archaeological Resources During Construction | Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the Ontario Heritage Act.<br>The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the MCM should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. |
| | Further Archaeological Assessments | Based on the results of the Stage 1 Archaeological Assessment Report, a Stage 2 Archaeological Assessment for parts of the Study Area is recommended. Stage 2 (and any further recommended archaeological assessment) will be completed as soon as possible during detailed design and prior to any ground disturbing activities. The archaeological assessment report will be submitted by the licensed archaeologist to the MCM for review in accordance with the Ontario |

| Agency | Permit / Approval | Description |
|---|---|---|
| | | Heritage Act. Notification from MCM that the archaeological assessment reports have been entered into the Ontario Public Register of Archaeological Reports will be received before construction. |

## 10.2 Detailed Design Commitments

The following works will be completed during detailed design:

- Technical Studies
  - A CHER will be completed for the two properties identified as having potential for cultural heritage value. The property specific CHERs would identify if the properties are of cultural heritage value or interest and would develop a Statement of Significance and list of heritage attributes. If heritage attributes are identified through the CHER, a HIA should be conducted during detailed design to specifically assess the impacts of the proposed intersection redevelopment. The properties with potential for cultural heritage value are:
    - 3093 Thirty Road (Regional Road 14)
    - 6285 Young Street
  - The CHAR report prepared by PHC Inc. will be shared with the West Lincoln Heritage Committee during detailed design for their review and comments.
  - Based on the results of the Stage 1 Archaeological Assessment Report, a Stage 2 Archaeological Assessment for parts of the Study Area is recommended. Stage 2 (and any further recommended archaeological assessment) will be completed as soon as possible during detailed design and prior to any ground disturbing activities. The archaeological assessment report will be submitted by the licensed archaeologist to the Ministry of Citizenship and Multiculturalism (MCM) for review in accordance with the Ontario Heritage Act.
- Utilities
  - Utilities will be consulted and engaged with during detailed design to confirm potential impacts to utility infrastructure within the Study Area as a result of the preliminary design.
  - Hydro One will be provided an opportunity to review the detailed design.

- Design Elements
  - Location of signage within roundabout intersection will be confirmed during detailed design. Efforts will be made to accommodate large farm vehicles and equipment within the roundabout.
  - Prepare a traffic management plan to maintain vehicular access during construction.
  - Confirm additional illumination requirements and finalize lighting design.
  - Determine tree replacement ratio in consideration of Six Nations of the Grand River's request. The Niagara Region typically replaces at a 2:1 ratio.
  - A grading/fill plan demonstrating volume of fill will be developed as required by NPCA.
- Impacted Properties
  - The preliminary design currently requires the removal of trees on 3093 Thirty Road property, the southeast corner of the intersection. Per the property owner's request, trees will be replaced per the Region's policy for tree replacement and the location of the news trees will be determined in consultation with property owners.
  - Confirm property requirements and initiate property purchase process with impacted property owners.
  - Review minutes from meetings with impacted property owners south of Young Street to confirm agreement regarding new driveway access.

## 10.3 Distribution of Notice of Study Completion and Environmental Study Report

In accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'C', a Notice of Study Completion is anticipated to be issued in **Fall 2024**. Through issuance of the Notice of Study Completion, this Environmental Study Report (ESR) documenting the planning process undertaken, details of the study recommendations, and potential impacts and mitigation measures will be placed on the public record for the mandatory 30-day review period.

The Notice of Study Completion will also advise the public that during the 30-day review period, a request may be made to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that condition be imposed (e.g., require further studies), on the grounds that the requested order may

prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and Treaty rights.

Following the close of the 30-day public review period, the MECP has an additional 30 days to consider the project and review any potential Section 16 Order requests submitted during the 30-day public review period. The Niagara Region may not proceed with the project for at least these 30 days of the MECP review period.

Following the 30-day MECP review period, the project may proceed to detailed design and construction provided the ministry is not reviewing Section 16 Order requests related to the project and subject to any other permits and approvals that may be required.